

# Service Manual

**PIONEER**  
The Art of Entertainment

●DEH-P705/UC



ORDER NO.  
**CRT1553**

MULTI-CD CONTROL HIGH POWER CD PLAYER WITH FM/AM TUNER

# DEH-P705 UC

# DEH-P65 UC

# DEH-P605 UC

# DEH-P703 ES

MULTI-CD CONTROL HIGH POWER CD PLAYER WITH RDS TUNER

# DEH-P705RDS EW,X1B/EW

●See the service manual DEH-M980(CRT1450) for the CD mechanism description and circuit description.

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# CHAPTER 1

## ●CD Player Service Precautions

1. For pickup unit(CGY1026) handling,please refer to "Disassembly"(Fig. 10).During replacement,handling precautions shall be taken to prevent an electrostatic discharge(protection by a short pin).
2. During disassembly,be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.

## SAFETY INFORMATION (UC MODEL)

### CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

### WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

## SAFETY INFORMATION (EW MODEL)

### 1. Safety Precautions for those who Service this Unit.

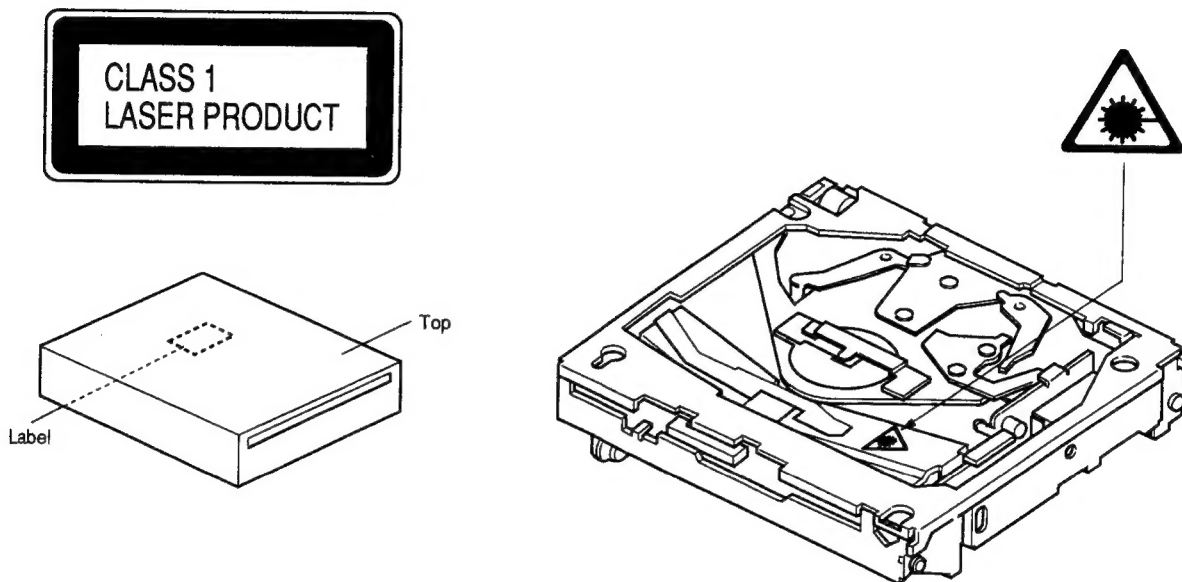
- Follow the adjustment steps (see pages 1-29 through 1-40) in the service manual when servicing this unit. When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.

#### Caution:

- During repair or tests, minimum distance of 13cm from the focus lens must be kept.
- During repair or tests, do not view laser beam for 10 seconds or longer.

- A "CLASS 1 LASER PRODUCT" label is affixed to the rear of the player.

- The triangular label is attached to the mechanism unit frame.



### 4. Specifications of Laser Diode

Specifications of laser radiation fields to which human access is possible during service.

Wavelength = 785 nanometers

Radiant power = 69.7 microwatts (Through a circular aperture stop having a diameter of 80 millimeters)  
0.55 microwatts (Through a circular aperture stop having a diameter of 7 millimeters)





# DEH-P703/ES

## Specifications

### General

Power source	14.4 V DC (10.8 — 15.6 V allowable)
Grounding system	Negative type
Max. current consumption	10.0 A
Dimensions	
(DIN) (mounting size)	178 (W) × 50 (H) × 150 (D) mm
(nose)	188 (W) × 58 (H) × 20 (D) mm
(D) (mounting size)	178 (W) × 50 (H) × 155 (D) mm
(nose)	170 (W) × 48 (H) × 15 (D) mm
Weight	1.5 kg

### Amplifier

Continuous power output is 14 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.	
Max. power output	30 W × 4 (EIAJ)
Continuous power output	14 W × 4 (1% dist. at 1 kHz)
Load impedance	4Ω (4 — 8Ω allowable)
Preout output level/	
output impedance	500 mV/1 kΩ
Tone controls (bass)	±12 dB (100 Hz)
(middle)	±12 dB (1 kHz)
(treble)	±12 dB (10 kHz)
Loudness contour	+10 dB (100 Hz), +6.5 dB (10 kHz) (volume: -30 dB)

### CD player

System	Compact disc audio system
Usable discs	Compact disc
Signal format	Sampling frequency: 44.1 kHz
	Number of quantization bits: 16; linear
Frequency characteristics	5 — 20,000 Hz (±1 dB)
Signal-to-noise ratio	94 dB (1 kHz) (IEC-A network)
Dynamic range	90 dB (1 kHz)
Number of channels	2 (stereo)

### FM tuner

Frequency range	87.5 — 108 MHz
Usable sensitivity	11 dBf (1.0μV/75Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	16 dBf (1.7μV/75Ω, mono)
Signal-to-noise ratio	70 dB (IEC-A network)
Distortion	0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response	30 — 15,000 Hz (±3 dB)
Stereo separation	40 dB (at 65 dBf, 1 kHz)
Selectivity	70 dB (2ACA) (±400 kHz)
Three-signal intermodulation (desire signal level)	
	50 dBf (two undesire signal level: 110 dBf)

### AM tuner

Frequency range	531 — 1,602 kHz (9 kHz)
	530 — 1,710 kHz (10 kHz)
Usable sensitivity	18μV (25 dB) (S/N: 20 dB)
Selectivity	50 dB (±9 kHz)
	50 dB (±10 kHz)

### Note:

Specifications and the design are subject to possible modification without notice due to improvements.

# DEH-P705RDS/EW

## Specifications

### General

Power source	14.4 V DC (10.8 — 15.6 V allowable)
Grounding system	Negative type
Max. current consumption	10.0 A
Dimensions (chassis)	178 (W) × 50 (H) × 150 (D) mm
(front face)	188 (W) × 58 (H) × 20 (D) mm
Weight	1.5 kg

### Amplifier

Max. power output	30 W × 4 (EIAJ)
Continuous power output	20 W × 4 (DIN 45324, +B=14.4 V)
Load impedance	4Ω (4 — 8Ω allowable)
Preout output level/	
output impedance	500 mV/1 kΩ
Tone controls (bass)	±12 dB (100 Hz)
(middle)	±12 dB (1 kHz)
(treble)	±12 dB (10 kHz)
Loudness contour	+10 dB (100 Hz), +6.5 dB (10 kHz) (volume: -30 dB)

### CD player

System	Compact disc audio system
Usable discs	Compact disc
Signal format	Sampling frequency: 44.1 kHz
	Number of quantization bits: 16; linear
Frequency characteristics	5 — 20,000 Hz (±1 dB)
Signal-to-noise ratio	94 dB (1 kHz) (IEC-A network)
Dynamic range	90 dB (1 kHz)
Number of channels	2 (stereo)

### FM tuner

Frequency range	87.5 — 108 MHz
Usable sensitivity	11 dBf (1.0μV/75Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	16 dBf (1.7μV/75Ω, mono)
Signal-to-noise ratio	70 dB (IEC-A network)
Distortion	0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response	30 — 15,000 Hz (±3 dB)
Stereo separation	40 dB (at 65 dBf, 1 kHz)

### MW tuner

Frequency range	531 — 1,602 kHz
Usable sensitivity	18μV (25 dB) (S/N: 20 dB)
Selectivity	50 dB (±9 kHz)

### LW tuner

Frequency range	153 — 281 kHz
Usable sensitivity	30μV (30 dB) (S/N: 20 dB)
Selectivity	50 dB (±9 kHz)

### Note:

Specifications and the design are subject to possible modification without notice due to improvements.

## 2. OPERATION AND CONNECTION

### Precautions

**CAUTION: USE OF CONTROL OR ADJUSTMENT OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.**

**CAUTION: THE USE OF OPTICAL INSTRUMENTS WITH THIS PRODUCT WILL INCREASE EYE HAZARD.**

#### Note:

- Do not disassemble the unit.

#### In case of trouble

When the unit does not operate properly, contact your dealer or the nearest authorized PIONEER Service Station. In the United States please call 1-800-421-1404 for product information or your nearest service center or 1-800-228-7221 for information on parts.

#### Important

The serial number of this device is located on the bottom of the unit. For your own security and convenience, be sure to record this number on the enclosed warranty card.

### Connecting the Units

#### Note:

- This unit is for vehicles with a 12-volt battery and negative grounding. Before installing it in a recreational vehicle, truck, or bus, check the battery voltage.
- To avoid shorts in the electrical system, be sure to disconnect the battery  $\ominus$  cable before beginning installation.
- After completing installation and wiring, double check that there are no mistakes. Re-install any parts removed from the car during installation, then connect the battery negative terminal.
- Refer to the owner's manual for details on connecting the various cords of the power amp and other units, then make connections correctly.
- Secure the wiring with cable clamps or adhesive tape. To protect the wiring, wrap adhesive tape around them where they lie against metal parts.
- Route and secure all wiring so it cannot touch any moving parts, such as the gear shift, handbrake, and seat rails. Do not route wiring in places that get hot, such as near the heater outlet. If the insulation of the wiring melts or gets torn, there is a danger of the wiring short-circuiting to the vehicle body.

- Don't pass the orange lead through a hole into the engine compartment to connect to the battery. This will damage the lead insulation and cause a very dangerous short.
- Do not shorten any leads. If you do, the protection circuit may fail to work when it should.
- Never feed power to other equipment by cutting the insulation of the power supply lead of the unit and tapping into the lead. The current capacity of the lead will be exceeded, causing over heating.
- When replacing fuses, be sure to use only fuses of the rating prescribed on the fuse holder.
- Since a unique BPTL circuit is employed, never wire so the speaker leads are directly grounded or the left and right speaker  $\ominus$  leads are common.
- Speakers connected to this unit must be high-power type possessing maximum input of at least 30 W and impedance of 4 to 8 ohms. Connecting speakers with output and/or impedance values other than those noted here can damage the speakers.

- When the power amp is being linked with this system, be sure not to connect the blue lead to the amp's power terminal. Likewise, when linking this system with the auto-antenna, do not connect to power terminal for the antenna. Such connection can make overcurrent cause malfunctions.
- When the unit is mounted in a vehicle whose ignition switch does not have the ACC (accessory) position as shown in Fig. 2, be sure to connect the red lead of the unit to the terminal controlled by the ignition switch ON/OFF position. If you do not, the vehicle battery may go flat when you leave your vehicle for several hours. (Fig. 1: ACC position/ Fig. 2: No ACC position)



Fig. 1



Fig. 2

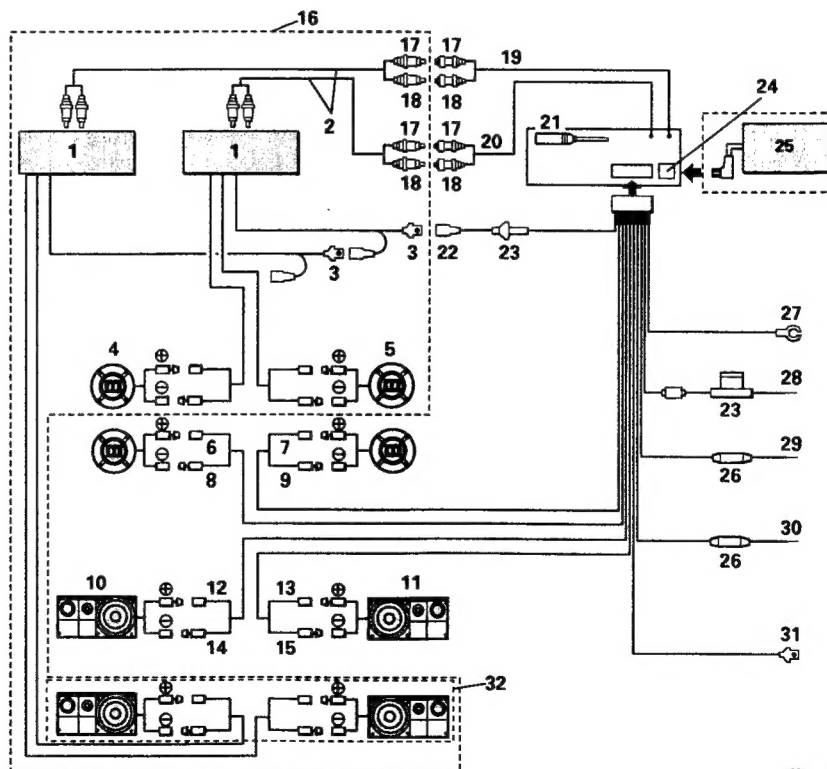


Fig. 3

### Connection Diagram (Fig. 3)

1. Power amp (sold separately)
2. Connecting cords with RCA pin plugs (sold separately)
3. Blue
4. Front/left speaker
5. Front/right speaker
6. Green
7. Gray
8. Green/black
9. Gray/black
10. Rear/left speaker
11. Rear/right speaker
12. Green/red
13. Gray/red
14. Black/green
15. Black/gray
16. Connected only when the optional amplifier is used. Nothing is connected when operating the built-in amplifier itself.
17. White
18. Red
19. Rear out or sub woofer out can use either as rear out or sub woofer out. To switch output, see the section "Using the Sub-woofer" in the owner's manual. (DEH-P605 has rear out only and does not switch to sub woofer out.)
20. Front out (DEH-P605 does not have this terminal.)
21. Antenna jack
22. Blue  
To system control terminal of the power amp or Auto-antenna relay control terminal (Max. 300 mA 12 V DC).
23. Fuse holder
24. Multi-play CD player terminal
25. Multi-play CD player (sold separately)  
A maximum of 4 multi-play CD players can be connected. For connection details, see the owner's manual for the multi-play CD player.
26. Fuse resistor
27. Black (ground)  
To vehicle (metal) body.
28. Orange  
To terminal always supplied with power regardless of ignition switch position.
29. Red  
To electric terminal controlled by ignition switch (12 V DC) ON/OFF.
30. Yellow  
To lighting switch terminal.
31. Yellow/black  
Cellular Mute  
If you use a cellular telephone, connect it via the Audio Mute lead on the cellular telephone. If not, keep the Audio Mute lead free of any connections.
32. Rear or sub woofer speaker (DEH-P605 has rear speaker only.)

### Installation

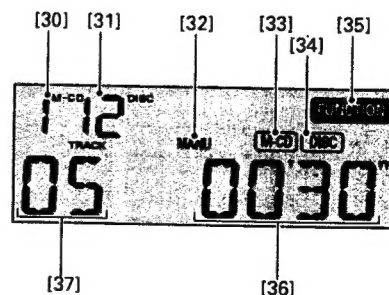
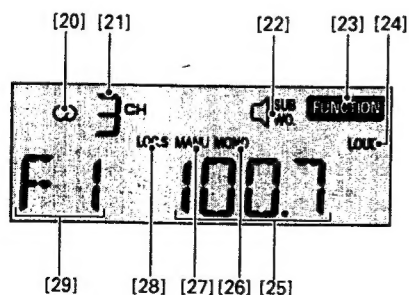
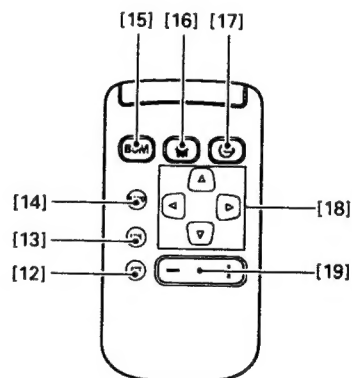
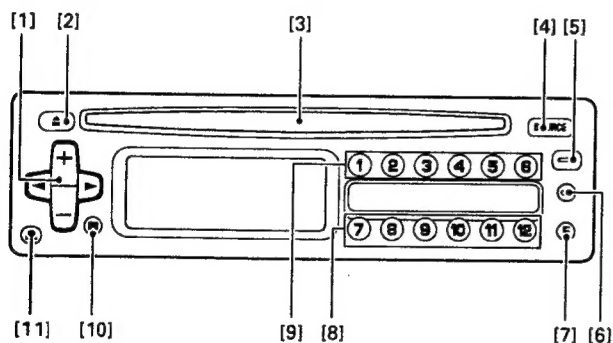
#### Note:

- Before finally installing the unit, connect the wiring temporarily and make sure it is all corrected up properly and the unit and the system work properly.
- Use only the parts included with the unit to ensure proper installation. The use of unauthorized parts can cause malfunctions.
- Consult with your nearest dealer if installation requires the drilling of holes or other modifications of the vehicle.
- Install the unit where it does not get in the driver's way and cannot injure the passenger if there is a sudden stop, like an emergency stop.
- If installation angle exceeds 30° from horizontal, the unit might not give its optimum performance. (Fig. 4)



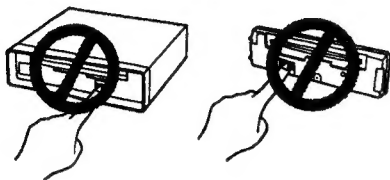
Fig. 4

- The semiconductor laser will be damaged if it overheats, so don't install the unit anywhere hot — for instance, near a heater outlet.



### Precautions

- Do not hold the display tightly.
- Do not subject the front panel to excessive shock.
- Do not place the front panel in high temperatures or direct sunlight.
- Do not use benzene, paint thinner, or other volatile fluids to clean the front panel.
- Do not disassemble the front panel.
- Do not touch the terminals on the front panel and unit. (If the terminals are dirty, use a clean dry cloth to clean.)



## Changing the Source

### Parts Identification

- [4] Source
- [8] ⑦ AUX ON/OFF
- ⑧ "M-CD" display ON/OFF

### Changing the Source

Each time the button [4] is pressed, the source will change in the following sequence:

Built-in CD player → Tuner → Multi-play CD player → OFF

- If a multi-CD player is not connected to this unit and the source is switched to the multi-CD player position, the display shows "M-CD". This display may be cleared by carrying out the following operation.  
While holding down ⑧ of button [8], turn the car ignition key from OFF to ON.
- If there is no disc in the built-in CD player, the source will not change to "built-in CD player".
- If the multi-play CD player is not connected or if there is no magazine in the multi-play CD player, the source will not change to "multi-play CD player".

**When connecting other audio equipment to the IP-BUS terminal of the main unit using the separately sold conversion cord.**

When listening to the audio equipment, carry out the following operations to switch to AUX mode.

1. While pressing ⑦ of button [8], turn the ignition key from OFF to ON.
2. Switching sources allows selection of AUX mode. Therefore, press button [4] to switch to AUX mode.  
Built in CD player → Tuner → Multi-play CD player → AUX → OFF

## Adjusting the Audio

### Parts Identification

- [1] Volume/Audio adjustment
- [10] Shift/SLA
- [12] Attenuator
- [22] Sub woofer
- [24] Loudness

### Mode Selection

Each press of button [10] changes the mode as follows:

Volume adjustment (VOL) → Balance adjustment (FAD/BAL) → Pre-fader (P-FAD) → Tone adjustment (BAS/MID/TRE) → Loudness adjustment (LOUD)

- When you're adjusting fader, balance, Pre-fader, bass, middle or treble, the indicator will stop at the center setting. About 8 seconds after adjustment, the display returns to its previous state.

### Volume Adjustment

Pressing the (+) side of button [1] increases the volume, while the (-) side decreases it. (Display shows "VOL 00" ~ "VOL 30".)

- When driving your vehicle, be sure to keep the volume of the unit set low enough to allow you to hear sounds coming from outside.

### Balance Adjustment

Press button [10] to select balance adjustment mode. ("FAD" appears on the display.) Adjust the fader using the (+) or (-) side of button [1]. To adjust the balance, press either the (◀) or (▶) side of button [1].

### Fader

This fader controls the balance between speakers ② and speakers ③, which are shown in Figure 5.

Press the (+) side of button [1] to raise the volume of speakers ② only; press the (-) side to raise the volume of speakers ③ only.

(Display shows "FAD F9" ~ "FAD R9".)  
• Please set "FAD 0" when using 2 speaker system.

### Note:

This unit has a fader that controls the balance between speakers ② and ③, shown in Figure 5, using button [1], and a prefader that controls the balance between speakers ①, ②, ③ and speakers ④.

### Balance

Pressing the (◀) side of button [1] shifts the balance to the left speaker, while the (▶) side shifts it to the right speaker. (Display shows "BAL L9" ~ "BAL R9".)

### Pre-Fader Adjustment

- DEH-P605 does not have a pre out for the front, speaker ① cannot be connected. The pre-fader function of this unit controls the balance between speakers ①, ②, ③ and speaker ④, which are shown in Figure 5.

Press button [10] to select pre-fader adjustment mode. Each press of the (+) side of button [1] gradually shifts the sound to speakers ①, ② and ③. Each press of the (-) side shifts the sound to speaker ④. (Display shows "P-FAD +9" ~ "P-FAD -9".)

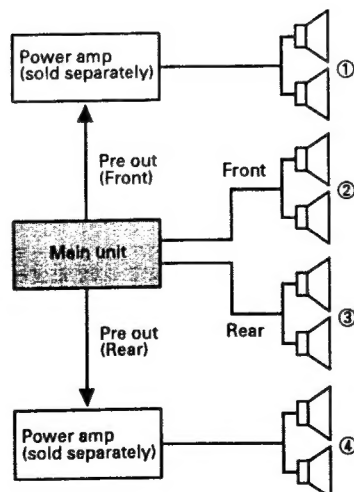


Fig. 5

### Tone Adjustment

Press button [10] to select tone adjustment mode. ("BAS" appears.) Select the tone you wish to adjust using the (◀) or (▶) side of button [1]. Each press of the (▶) side changes the tone from BAS → MID → TRE, while each press of the (◀) side changes the tone from TRE → MID → BAS.

### Bass Adjustment

Select the Bass mode. Pressing the (+) side of button [1] increases bass, while the (-) side decreases bass. (Display shows "BAS -6" ~ "BAS +6".)

### Middle Adjustment

Select Middle adjustment mode. Pressing the (+) side of button [1] increases middle, while the (-) side decreases middle. (Display shows "MID -6" ~ "MID +6".)

### Treble Adjustment

Select Treble adjustment mode. Pressing the (+) side of button [1] increases treble, while the (-) side decreases treble. (Display shows "TRE -6" ~ "TRE +6".)

**Loudness Adjustment**

This "loudness" function enhances both the high and low ranges of sound to give even more power to output even at low volume.

Press button [10] to select loudness adjustment mode. (The "LOUD" indicator appears on the display.)

Pressing the (▶) side of button [1] turns the loudness function on (LOUD [24] lights up); pressing the (◀) side turns it off.

**Using the Sub-woofer**

- DEH-P605 does not have this feature. This unit's pre-out output (Rear) terminals can also be used as sub-woofer output terminals. When using these terminals as sub-woofer output terminals, carry out the following operations.

- When the sub-woofer function is used, the Pre Fader function does not work. When button [10] in the previous item is pressed, the display moves to the next step in the sequence: VOL → FAD/BAL → 80 HZ (Sub-woofer) → BAS/MID/TRE → LOUD. (In other words, the Sub-woofer display replaces the Pre Fader display.)

**Using the sub-woofer function**

1. Press button [10] repeatedly to switch to the Pre Fader display ("P-FAD+9" → "P-FAD-9").
2. When you hold down button [10] for at least 2 seconds, "SUB. WO" [22] lights up and the sub-woofer function comes on. The display switches to the sub-woofer display for about 8 seconds (displaying the frequency and output level "80HZ 0").
3. To end the sub-woofer function, press button [10] repeatedly to switch to the sub-woofer display. Holding down button [10] for at least 2 seconds while the sub-woofer is being displayed ends the sub-woofer function.

**Frequency and output level adjustment**

1. Press the button [10] repeatedly to switch to the sub-woofer display. (For about 8 seconds, the display shows the frequency and output level "80HZ 0").
2. While the sub-woofer display is shown, adjust the frequency and output level. Pressing the (◀) or (▶) side of button [1] raises or lowers the frequency. Pressing the (+) or (-) side of button [1] raises or lowers the output level. The frequency can be set to 50 Hz, 80 Hz, or 120 Hz. The output level can be set within the range from -6 to 6.

**Using the Source Level Adjuster (SLA)**

This is to adjust the difference in volume when the source is changed to built-in CD player, multi-play CD player, FM, or AM.

- Since the FM volume will be the standard volume, it cannot be adjusted.

1. Check the FM volume.
2. Switch to the source whose volume is to be adjusted. Check the source's difference in volume with the FM volume.
3. Set to SLA mode. Press button [10] for at least 2 seconds. (The current level of "V 0" will be displayed.)
  - The SLA mode will be canceled after 8 seconds.
4. Adjust the difference in volume. Press the (+) or (-) sides of button [1].

**Attenuator**

- DEH-P605 does not have this feature. The volume will be reduced to about 1/10. Press button [12]. ("ATT 12" will blink.) To cancel, press the button again.

**Using the Tuner****Parts Identification**

- [1] Tuning
  - Seek/Manual
  - Local Seek Sensitivity
- [4] Source
- [5] Band
- [7] Function
- [8] Preset
  - Ⓢ Local mode
  - Ⓢ FM Monaural
  - Ⓢ BSM/Preset Scan
- [9] Preset
- [20] FM Stereo
- [21] Preset Number
- [23] Function
- [25] Frequency
- [26] FM Monaural
- [27] Manual
- [28] Local mode
- [29] Band

**Electronic Tuner**

Frequency allocation differs depending upon the area. This unit has been designed in accordance with the frequency allocations for North America. Use in other areas will result in improper reception.

**Listening to the Radio**

1. Set the source to "tuner" by pressing button [4].
  - For details, refer to "Changing the Source".
2. Select the band by pressing button [5]. Each time the button is pressed, the band will change in the following sequence: FM1 → FM2 → AM
3. Use seek tuning or manual tuning to tune to a radio station.
  - 3-1. Set the tuning mode to "seek" or "manual" by pressing the (◀) and (▶) sides of button [1] simultaneously. Repeat this operation to switch to the other tuning mode. (When the manual tuning mode is set, "MANU" [27] will be displayed.)

- 3-2. Tune by Press (◀) or (▶) of button [1]. (When there is a stereo broadcast, "Ⓢ" [20] will be displayed.)

**Seek Tuning:**

When the button is pressed, stations whose signal strength is above a certain level will be tuned automatically.

**Manual Tuning:**

When the button is pressed, the frequency will change by one step up or down.

**Switching functions**

Button [8] has two functions. It switches FM monaural, BSM, etc. ON and OFF, and it also serves as the preset button for the FM 1 band. Press button [7] to switch the function as desired.

**Function ON:**

[23] lights up on the display. Button [7] lights up in yellow.

- Leave the function ON when using button [8] for FM monaural, BSM, etc.

**Function OFF:**

[23] on the display switches off. Button [7] lights up in red.

- Leave the function OFF when using button [8] as the preset button for the FM 1 band.

### Using the Preset Memory

The radio stations can be stored in memory under buttons 1 to 6 of [9].

- FM 1 bands can be stored in the memory of button [8] (7 to 12). Leave the function OFF when storing memory into button [8].
- 1. Tune in to the station to be stored in memory.
- 2. Store the station in memory by pressing one of the buttons (1 to 6) for at least 2 seconds. When the [21] number stops blinking and there is a beep, the station will be stored in memory under the button pressed.
  - Up to 18 FM stations (12 stations on FM 1 and 6 stations on FM 2) and 6 AM stations can be stored in memory.

### Preset Tuning

The radio stations stored in memory can be recalled by pressing the respective button 1 to 6 of [9]. The station stored under that button will be recalled. (The number of the button pressed will be displayed at [21].)

- The FM1 band can recall broadcast stations stored in the memory of button [8].

#### Note:

Leave the Function ON when using button [8] in the following operations.

### Using the Best Stations Memory (BSM)

The radio stations having a strong signal can be tuned automatically and stored in memory under buttons 1 to 6 [9]. Press ⑨ of button [8] for at least 2 seconds. (The "BSM" will blink.) After "BSM" stops blinking, the stations will be stored in memory under buttons 1 to 6 of [9].

- The FM 1 band can also be stored in the memory of button [8].
- BSM can be canceled mid-operation by pressing ⑨ of button [8].
- The stations will be stored under buttons 1 to 6 in the order of their signal strength. The strongest station will be stored under button 1, followed by stations with lower signal strengths.
- If there are fewer than 6 stations whose signal is strong, there will be spare memory.
- It will take almost 30 seconds for BSM to be completed.

### Preset Scan Tuning

This recalls in sequence all the stations stored in memory under the buttons [9] for 8 seconds each. Press ⑩ of button [8]. (The [21] number will blink.) To cancel, press the button again. After the desired station is tuned, cancel the preset scan tuning. The station will then continue to be received.

- Stations stored in memory under the buttons [9] but whose signal is weak will not be recalled.
- The FM 1 band can recall broadcasting stations stored in the memory of button [8].

### Local Seek Tuning

When the local mode is set, the seek tuning's sensitivity level will become high and only stations with a strong signal will be seek tuned. The local mode's seek sensitivity can be adjusted.

#### Setting the Local Mode

Press ⑩ of button [8]. (The "LOC.S" [28] will light.) To cancel the local mode, press the button again.

### Adjusting the Local Seek Sensitivity

There are 4 local seek sensitivity steps for FM and 2 steps for AM.

- LOC-4 is the highest seek tuning sensitivity level. Only the stations with a strong signal are tuned. LOC-3, LOC-2, and LOC-1 in descending order enables the tuning of stations with a respectively weaker signal.
- 1. Set to local seek sensitivity adjustment mode. Press ⑩ of button [8] for at least 2 seconds. (The current sensitivity level "LOC-2" will be displayed.)
  - The local seek sensitivity adjustment mode will be canceled after about 5 seconds.
- 2. Adjust the sensitivity level by pressing (◀) or (▶) of button [1].

### FM Monaural Reception

If a stereo broadcast has a lot of noise, switching to the monaural reception mode will reduce the noise. Press ⑩ of button [8]. ("MONO" [26] will appear on the display.) To cancel, press the button again.

### Playing Compact Discs

The unit can control the built-in CD player as well as a multi-play CD player sold separately.

#### Parts Identification

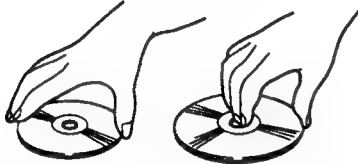
- [1] Track Number Search
  - Fast Forward and Reverse
- [2] Eject
- [3] Disc Insertion Slot
- [4] Source
- [7] Function
- [8] Disc Number Search
  - ⑧ Switching display
    - ⑧ ITS (Instant track selector)
    - ⑨ Switching playback mode
    - ⑩ Scan/Random play
    - ⑪ Title list
    - ⑫ Pause
- [9] Disc Number Search
- [30] Multi CD player number
- [31] Disc number
- [32] Manual
- [33] Multi-play CD repeat
- [34] Disc repeat
- [35] Function
- [36] Playback time
- [37] Track number

#### Discs

- Only use compact discs (optical digital audio discs) bearing the mark shown below.



- Do not use cracked, scratched, or warped discs.
- Do not touch the disc's playing side. Handle the disc as shown below.



- Do not affix any label on the disc.
- Do not apply any vinyl record spray, anti-static agent, benzene, paint thinner, or any other volatile chemicals.

- Do not play a dirty disc. Use a soft cloth to clean a dirty disc as shown below. Wipe the disc outward from the center.



- Do not place the disc in high temperatures and direct sunlight.
- Be sure to store the disc in its case.

#### CD Playing Environment

- Disc playback may be interrupted by sudden road shock.
- When the air temperature is low and the car heater is turned on, condensation on the disc and internal parts of the unit may prevent proper playback operation. If this happens, turn off the unit and wait one hour until the condensation is gone. Also, use a soft cloth to wipe off any condensation from the disc.

#### Listening to the Built-in CD Player

1. With the label side up, insert a disc into [3]. Playback will start. (The track number [37] and playback time [36] will be displayed.)
  - Do not insert the disc with the label side down. Doing so may scratch the disc.
  - If the disc stops midway while it is being inserted or if there is no playback after a disc is inserted, something may be wrong with the disc. Eject the disc and check it.
2. Turn ON/OFF the disc playback. Press button [4] to change the source.
  - For details, refer to "Changing the Source".

#### 3. Eject the disc by pressing button [2].

- Do not leave the disc halfway into the unit as shown below. Doing so may cause the disc to be bent or dropped.



#### Listening to the Multi-Play CD Player

1. Set the source to "multi-play CD player" by pressing button [4]. (The magazine number [30], disc number [31], track number [37], and playback time [36] will be displayed.)
  - For details, refer to "Changing the Source".
  - After a magazine is inserted into the multi-play CD player, it will take several seconds for disc playback to start. ("READY" will light.) It is because the multi-play CD player will check the discs.
2. Press button [4] to turn OFF when stopping disc playback.

#### Switching functions

Button [8] has two functions. It switches ITS, random replay, etc. ON and OFF and it also serves as the disc number search. Press button [7] to switch the function as desired.

##### Function ON:

[35] lights up on the display. Button [7] lights up in yellow.

- Leave the function ON when using button [8] for ITS random playback, etc.

##### Function OFF:

[35] on the display switches off. Button [7] lights up in red.

- Leave the function OFF when using button [8] for disc number search.

#### Switching the multi CD player

A maximum of 4 multi CD players can be connected to this unit.

Press button [5] to choose the desired CD player. The number of the CD player is indicated in [30] on the display.



### 3. DISASSEMBLY

#### ●Removing the Case

- 1.Remove the three screws.
- 2.Insert and turn a flat screwdriver at locations indicated by arrows to remove the case.

#### ●Removing the Detach Grille Assy

- 1.Press the detach button, and then pull detach grille Assy.

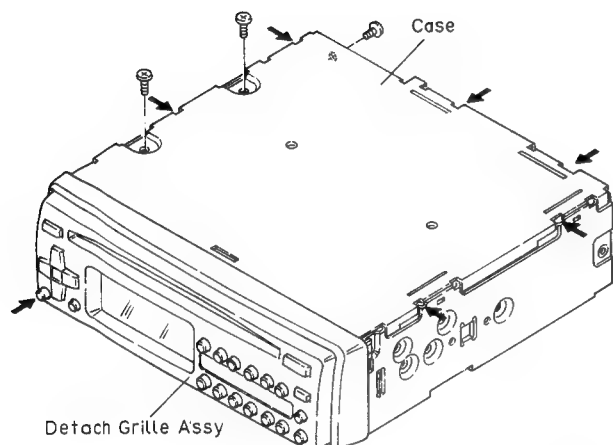


Fig.6

#### ●Removing the Panel Unit

- 1.Remove the screw and disconnect the two stoppers indicated by arrows.
- 2.Disconnect the connector.

#### ●Removing the CD Mechanism Module

- 1.Remove the four screws.
- 2.Disconnect the connector.
- 3.Remove the CD Mechanism Module.

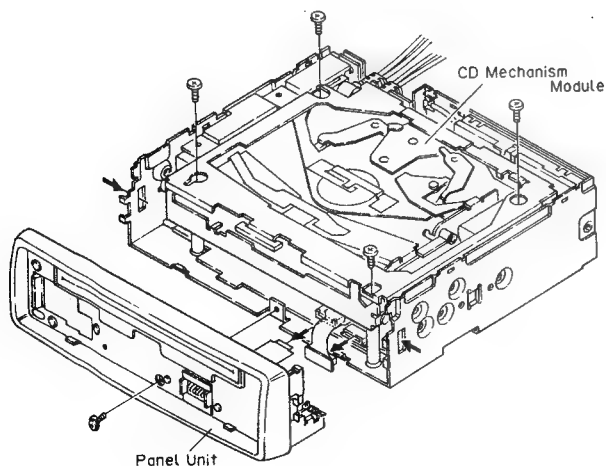


Fig.7

#### ●Removing the Chassis Unit

- 1.Remove the two screws.(UC,ES model)  
Remove the three screws.(EW model)
- 2.Remove the screw and then remove the holder.
- 3.Stretch the four claws.
- 4.Remove the chassis Unit

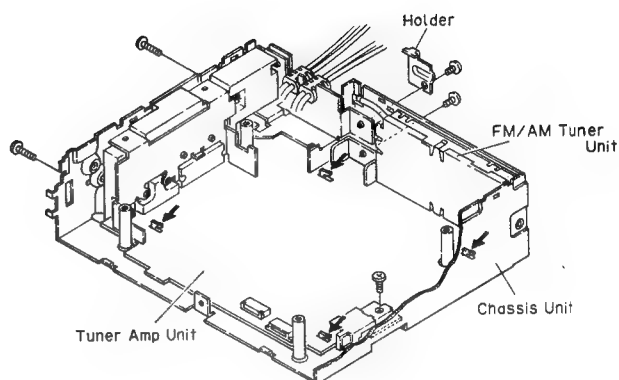


Fig.8

#### ●Removing the PU Unit and Carriage Motor Assy

- 1.Remove the spring B as indicated by the arrow.(Fig.9)
- 2.Remove the spring A.(Fig.9)
- 3.Remove the engagement as indicated by the arrows 1 and 2, and then remove the clamber assy.(Fig.9)

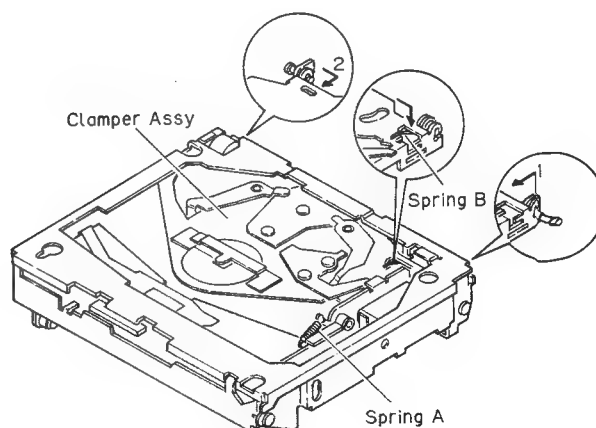


Fig.9



4. Fix short pin when removing the CN351 connector  
(For protection of the PU unit.)(Fig.10)
5. Remove the three screws. (Fig.10)
6. Since the control unit is connected to the switch substrate by means of connector, disconnect the connector and then remove the control unit right downward. (Fig.10)

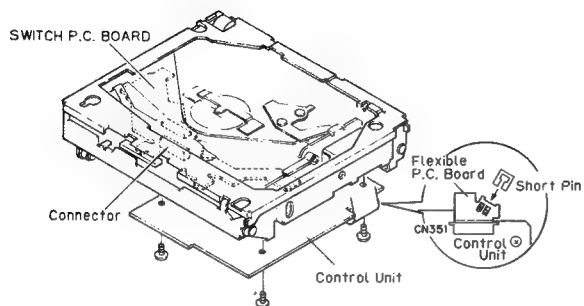


Fig. 10

7. Hook the spring as shown in the figure. (Fig.11)
8. Remove the holder and screw. (Fig.11)
9. Remove the flexible P.C. Board. (Fig.11)
10. Remove the PU Unit. (Fig.11)

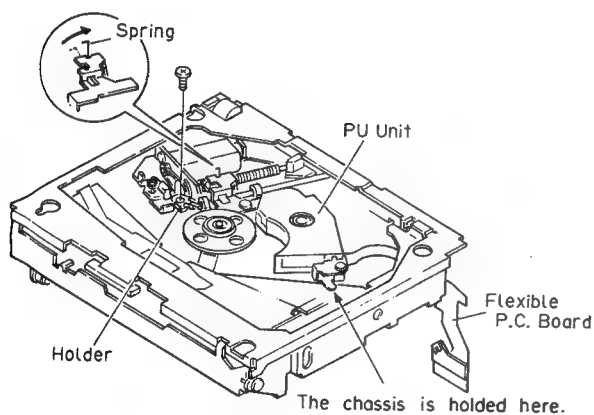


Fig. 11

11. Remove the screw, and then remove the carriage motor assy. (Fig.12)

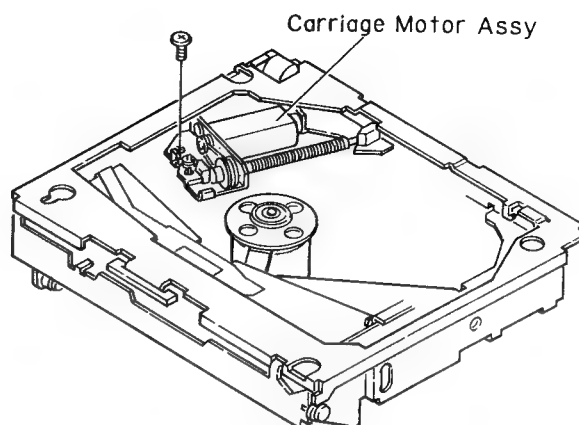


Fig. 12

### ● Removing the Damper Unit and Loading Motor

1. Turn the gear A manually in the arrow direction. (Fig.13)
2. Press the rack gear in the arrow direction and engage gears. (Fig.13)
3. Put into the play mode. (The clamber assembly is at low position.)(Fig.13)

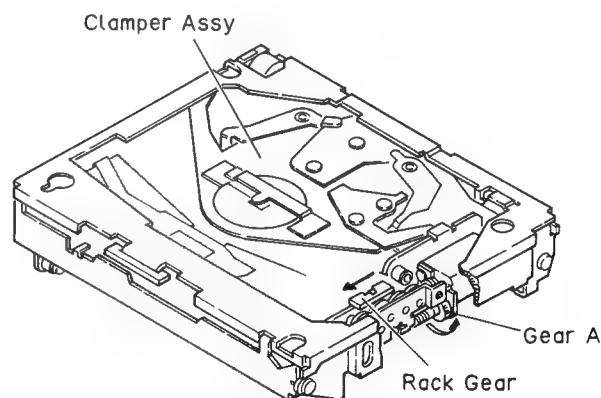


Fig. 13

- 4.Remove the four springs indicated by arrow.(Fig.14)
- 5.Remove the two screws A, and then remove the side frame assy.(Fig.14)
- 6.Remove the two screws B, and then remove the damper assy.(Fig.14)

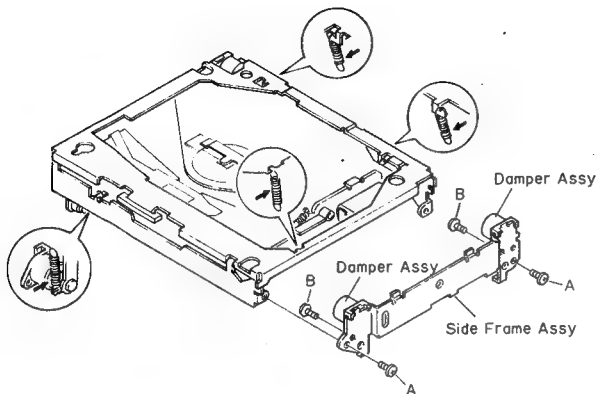


Fig.14

- 7.Remove the frame assy from the mechanical parts. (Fig.15)
- 8.Remove the two screws C, and then remove the damper assy.(Fig.15)
- 9.Remove the clamper assy as shown in Fig.15.

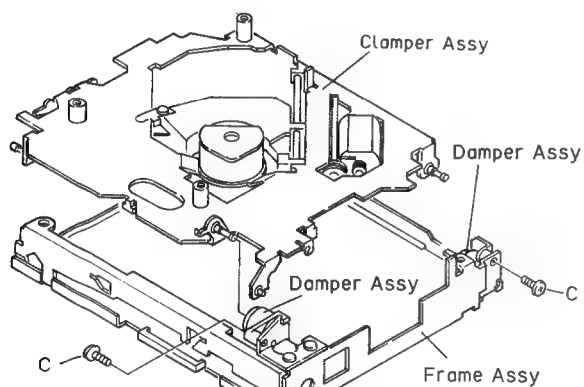


Fig.15

- 10.Turn the Loading gear to put into the ejection.(Fig.16)
- 11.Remove one of the screws and remove the gear unit pressing the arm slightly toward the arrow.(Fig.16)

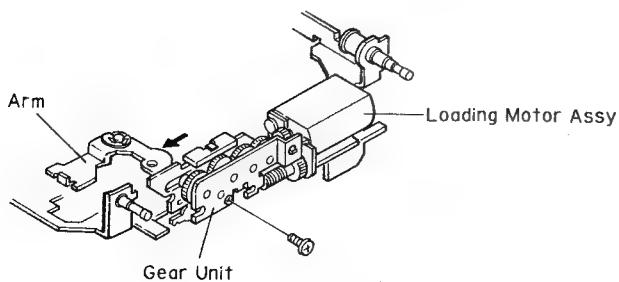


Fig.16

- 12.Remove the screw, and then remove the loading motor assy.(Fig.17)

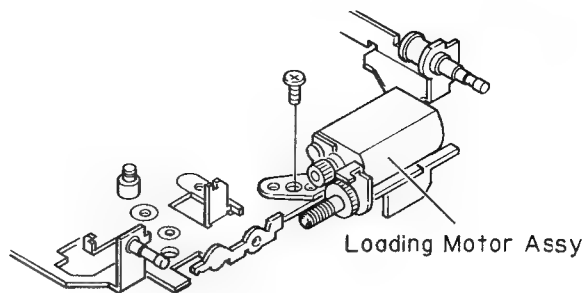


Fig.17

### ●Removing the Gear Unit

- 13.Shift lever as shown in Fig.18.
- 14.Remove the shaft A from C of lever.
- 15.Shift the gear as shown in Fig.18.
- 16.Remove the shaft B from C of lever.

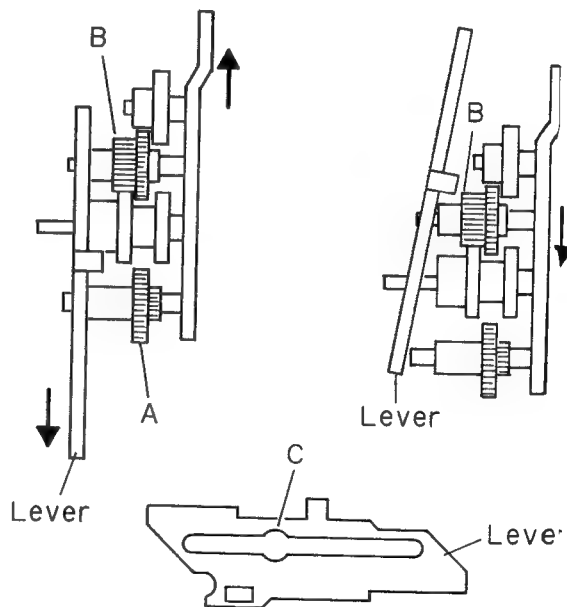


Fig.18

## 4. CIRCUIT DESCRIPTION

### ●Pre Attenuator Circuit

This model employs a pre attenuator circuit.

It is the circuit which attenuates an input level in the pre-stage of an electronic volume control according to the volume level.

The circuit permits us to improve the distortion factor at an ordinary playback level (at the ordinary volume level).

Once the transistor encircled with a dot line in the illustration has turned on, a resistance division will cause the input level to attenuate by -2 and -4 decibels.

An input to the electronic volume control varies as follows:

1. 0dB, with both transistors opened at the maximum.
2. -2dB, with the -2dB transistor ON.
3. -4dB, with the -4dB transistor ON.
4. -6dB, with both transistors ON.

This Model is to operate really in a combination with the electronic volume controls as follows:

VOL Control	30	29	28	27	26	25	..	..	0
Pre Attenuator	0	-2	-4	-6	-6	-6	..	..	-6
Electronic volume	0	0	0	0	-2	-4	..	..	-∞

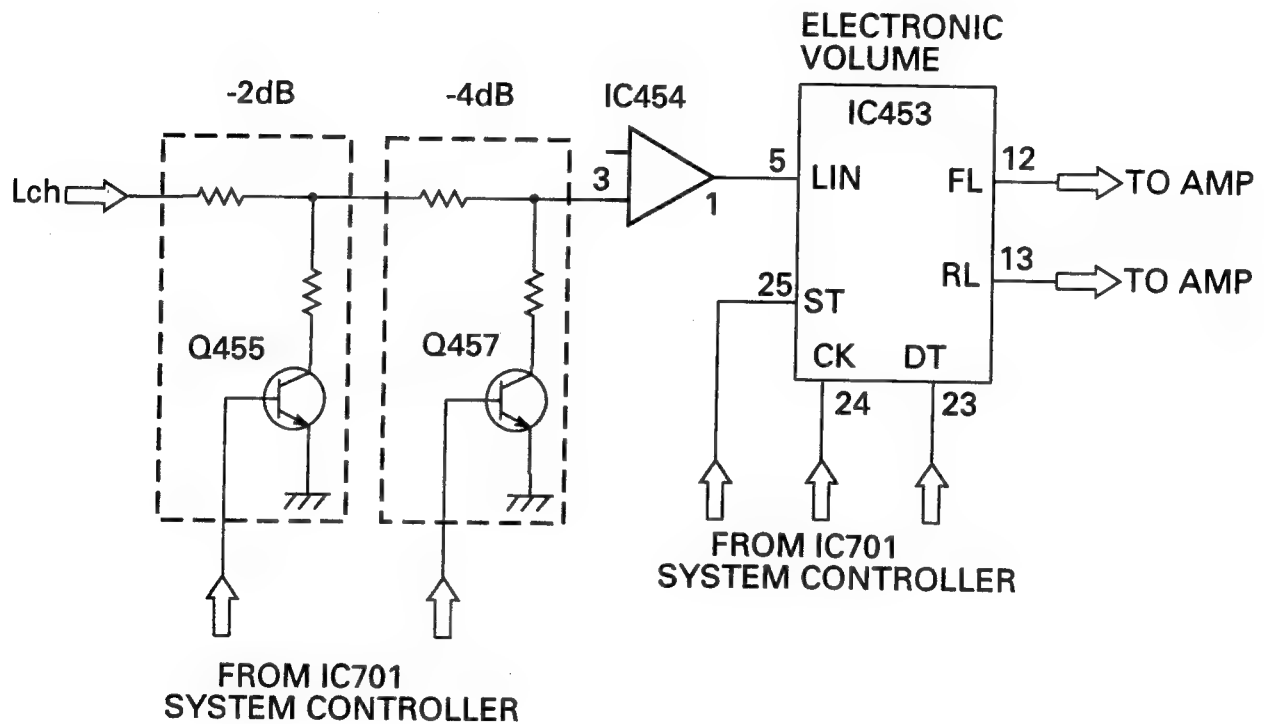
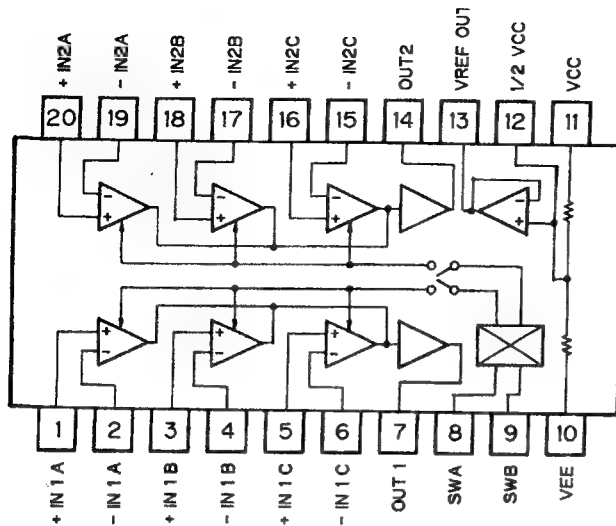


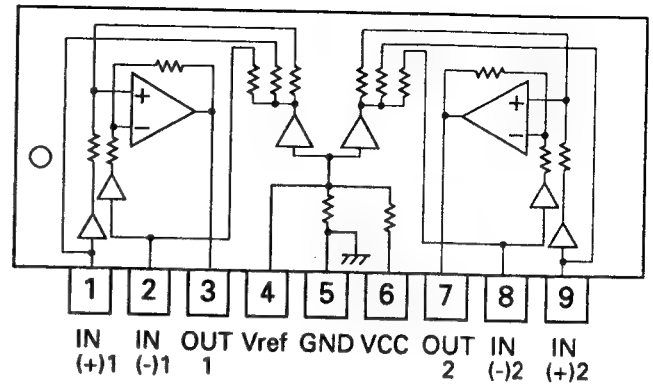
Fig.19



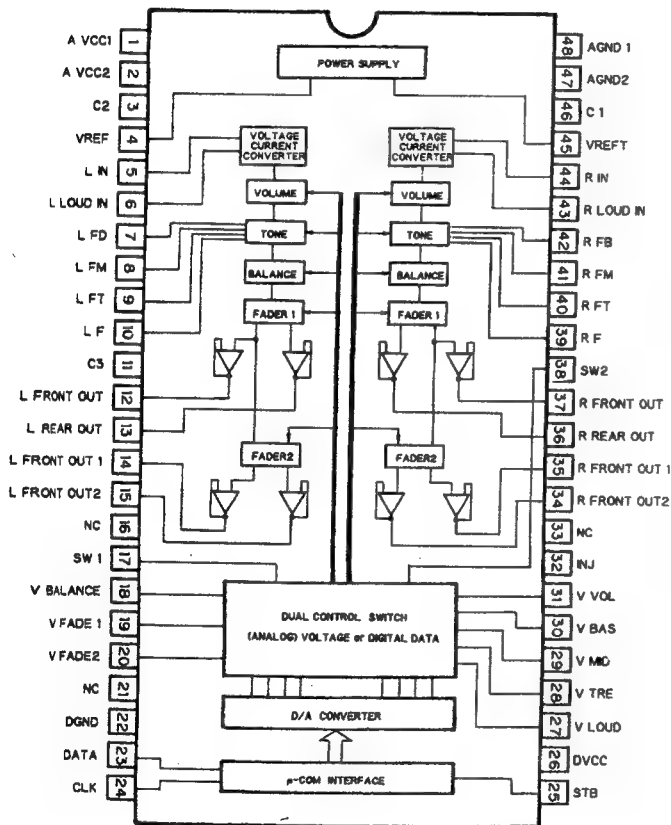
XRA3131FS



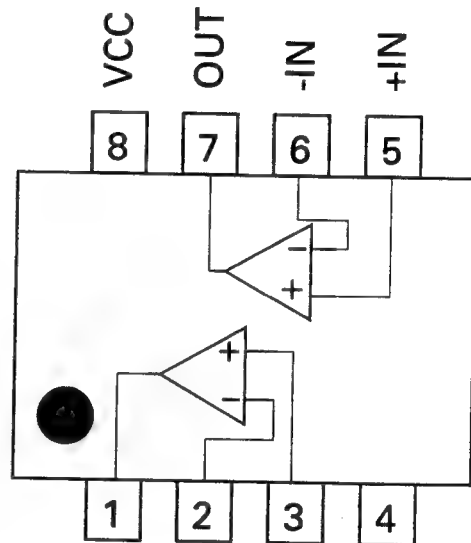
TA2050S



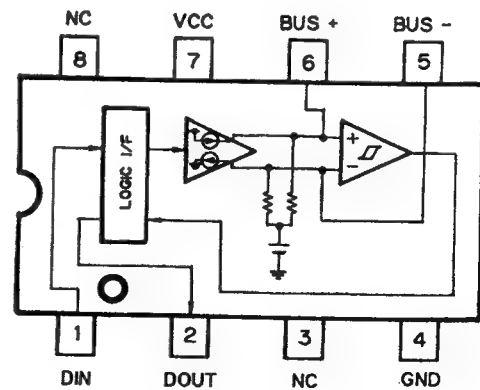
PM0004AM1



NJM4558MD



PA0051AM



● Pin Functions(PD4481A)

Pin No.	Pin Name	I/O	Output Format	Function and Operation
1	DSENS	I		Grille detach sense input
2	RDSRST	O	C	Reset output for RDS IC
3	RDSSEL	O	C	Select output for RDS IC
4	AVSS			A/D GND
5	RDSSEN	O	C	Enable output for RDS IC
6	RDSRDY	I		Ready input from RDS IC
7	AVREF			
8	KYDT	I		Key data input
9	DPDT	O	C	Display and illumination data output
10	SWVDD	O	C	Grille power supply control output
11	RDSDI	I		Serial data input for RDS IC
12	RSDSO	O	C	Serial data output from RDS IC
13	RDSCK	O	C	Serial clock for RDS IC
14	BRST	O	C	P-BUS reset output
15	BRXEN	I/O	C	P-BUS reception enable input/output
16	BSRQ	I		P-BUS communication request input
17	BSIO	I/O	C	P-BUS communication data input/output
18	BSCK	I/O	C	P-BUS communication data clock input/output
19	SOR0	O	C	Source select output
20	SOR1	O	C	Source select output
21	VST	O	C	Strobe output for electronic volume
22	VDT	O	C	Data output for electronic volume
23	VCK	O	C	Clock output for electronic volume
24	NC			Not used
25	TMUTE	O	C	Tuner mute output
26	MUTE	O	C	Mute output
27	ASENBO	O	C	Slave power supply control output
28	ANTFIX	O	C	Tuner diversity fix select output
29	EVCON0	O	C	Distortion revision port for electronic volume
30	EVCON1	O	C	Distortion revision port for electronic volume
31,32	NC			Not used
33	VSS			GND
34,35	NC			Not used
36	SUBW0	O	N	Sub woofer control 0
37	SUBW1	O	N	Sub woofer control 1
38	VOC	O	N	Audition output
39	CDPW	O	N	CD power control
40	TESTIN	I		Test program input
41	SYSPW	O	C	System power supply control output
42	VDIN	I		CD mechanism module power supply short sensor input
43	CDRST	O	C	Reset for CD mechanism module
44	TUNPW	O	C	Tuner power supply control output
45	PEE	O	C	Beep tone output
46	ISENS	I		Illumination sense input
47	BLGT	O	C	LCD back light control output
48	ILMPW	O	C	Illumination power supply control output
49	PCL	O	C	Clock adjustment output
50	FM/AM	O	C	FM/AM power select output
51	MONO	O	C	Forced mono output
52-55	NC			Not used
56	TX	O	C	IP BUS data output
57	RX	I		IP BUS data input
58	IPPW	O	C	Power supply control output for IP BUS interface IC
59	SD	I		FM SD input
60	RESET			Reset
61	NC			Not used

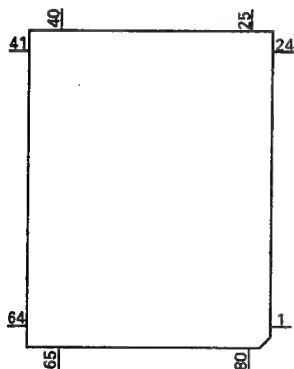
Pin No.	Pin Name	I/O	Output Format	Function and Operation
62	BSENS	I		Back up power sense input
63	ASENS	I		ACC power sense input
64	PDI	I		PLL data input
65	PDO	O	C	PLL data output
66	PCK	O	C	PLL clock output
67	PCE	O	C	PLL chip enable output
68	VDD			Power supply
69	X2			Crystal oscillator connection pin
70	X1			Crystal oscillator connection pin
71	IC			Connect to GND
72	XT2			Not used
73	TELIN	I		Telephone mute input
74	AVDD			
75	AVREF	I		
76	SL	I		Signal level input
77	SEL0	I		Model select pin
78	SEL1	I		Model select pin
79	SEL2	I		Model select pin
80	SEL3	I		Model select pin

Output Format	Meaning
C	CMOS
N	N channel open drain

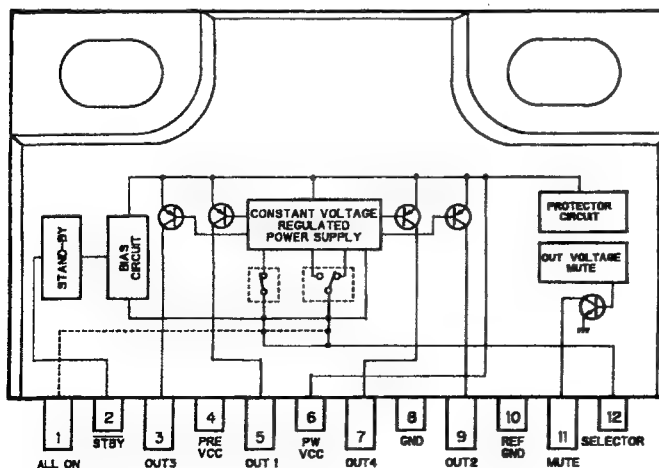
IC's marked by\* are MOS type.

Be careful in handling them because they are very liable to be damaged by electrostatic induction.

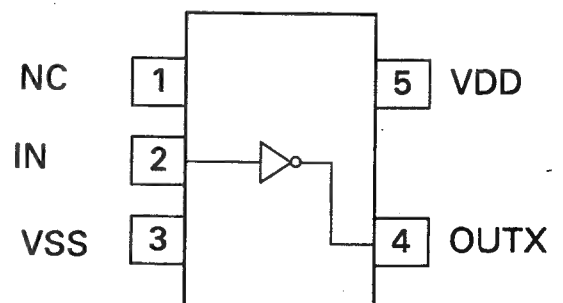
\*PD4481A



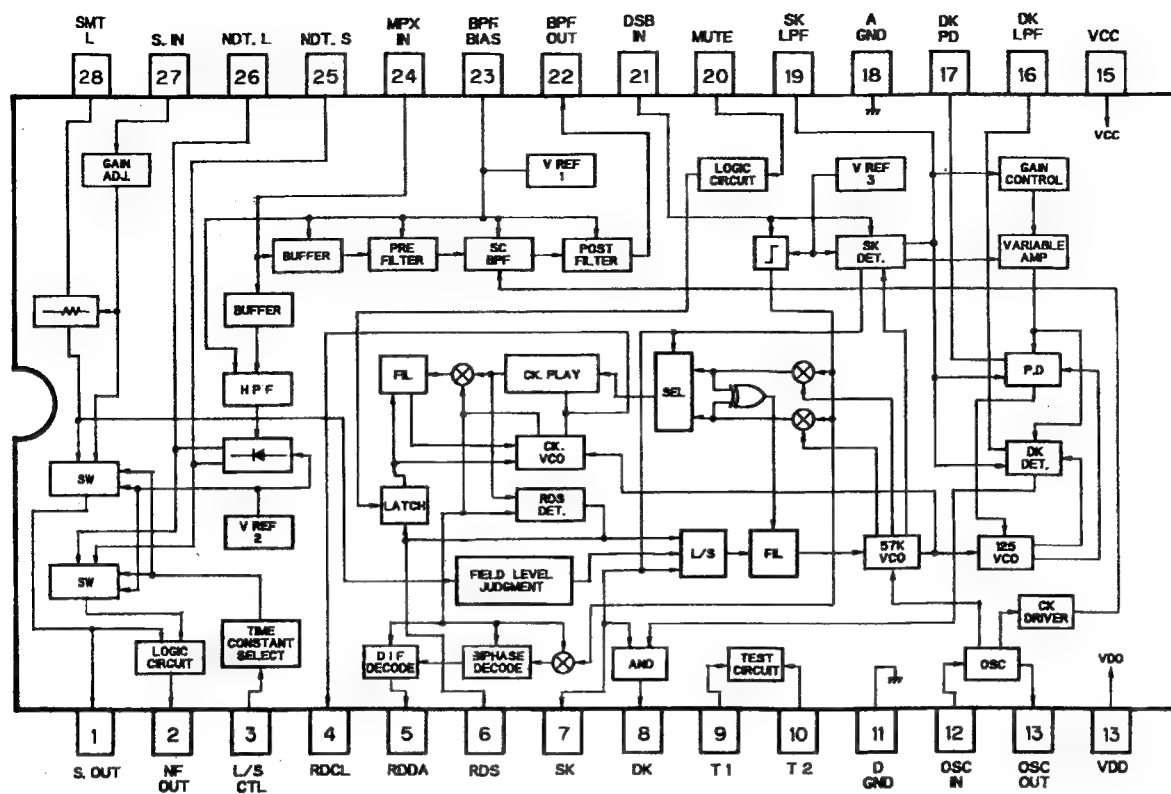
PA2023A



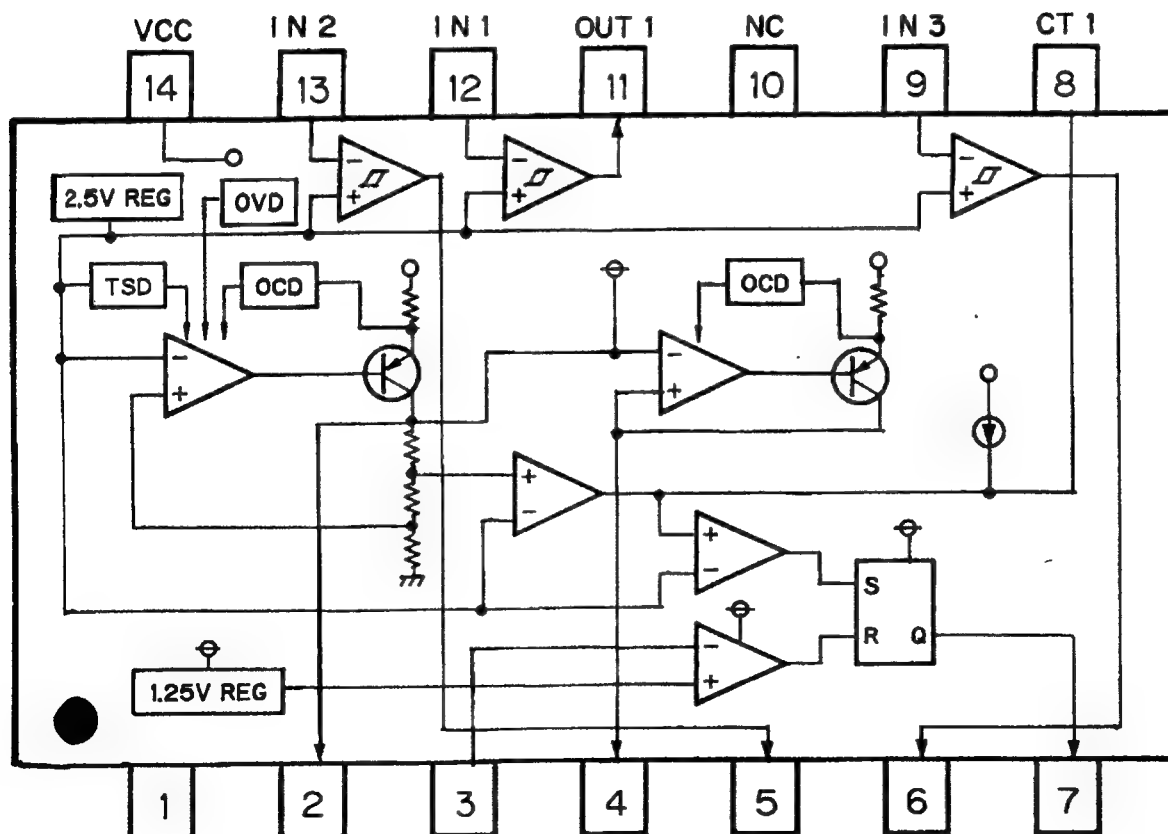
SC14SU69F



\*PMR001A



PAJ001A



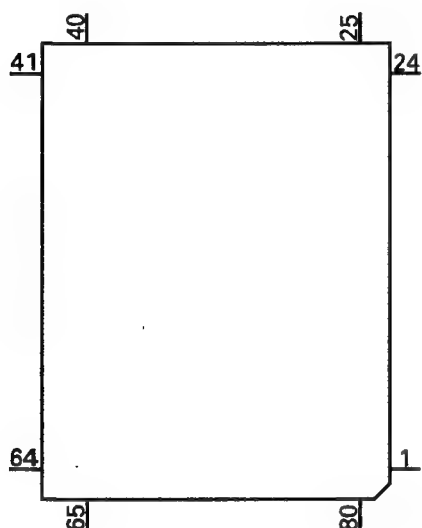


## ● Pin Functions(PD5256A)

Pin No.	Pin Name	I/O	Output Format	Function and Operation
1	NC			Not used
2	TEMP	I		Temperature detector
3	VDSENSE2	I		Short sense input
4	DCD	O	NM	Command/data appointment output
5	DCS	O	NM	Chip select output
6	DRDY	I		Ready input
7	DRST	O	NM	Reset output
8	A0	O	NM	Control signal distinguishing data from microcomputer
9	XSCK	O	NM	LSI clock output
10	XSO	O	NM	LSI data output
11	XSI	I		LSI data input
12	STB	O	C	LSI Strobe output
13	RST	O	C	Reset output pin
14	ENDOUT	O	C	Digital output enable signal
15	PEE	O	C	Beep tone output
16,17	NC			Not used
18	BRST	I		Bus communication reset input pin
19	BSRQ	O	C	Bus communications service request output pin
20	BRXEN	I/O	C	Bus communication reception enable input pin
21	BSCK	I/O	C	Bus serial clock input/output
22	BSO	O	C	Serial data output pin
23	BSI	I		Bus serial data input
24	EJSW	I		Eject signal input
25	REMIN	I		Remote control pulse input
26	CNVSS			GND
27	RESET	I		Reset input
28	FECNT	O	C	FE output control pin
29	NC			Not used
30	XIN	I		Crystal oscillating element connection pin
31	XOUT	O	C	Crystal oscillating element connection pin
32	VSS			GND
33-40	NC			Not used
41	POWER	O	C	CD +5V control
42	CONT	O	C	Servo driver power supply control
43,44	NC			Not used
45	VDSENS	I		VD over voltage sense input
46	VDCONT	O	C	VD control input
47	DSET	O	C	Disc set indicator control output
48	BLGT	O	C	LCD back light control output
49	VMC	O	C	Loading motor driver power supply
50	EJ	O	C	Loading motor EJECT control
51	LOAD	O	C	Loading motor LOAD control
52	NC			Not used
53	DINC	I		Disc insert sense input
54	EJTD	I		Disc eject position sense input
55	CLAMP	I		Disc clamp sense input
56	NC			Not used
57	HOLD	O		Hold control output
58	TBC	O	C	Tracking bank switching output
59	NC			Not used
60	MIRR	I		Mirror detector input
61	LOCK	I		Spindle lock detector input
62	FOK	I		FOK signal input
63	HOME	I		Home position detector input
64-68	NC			Not used
69	OPTSW	I		Digital output ON/OFF input
70	CDMUTE	O	C	CD mute output

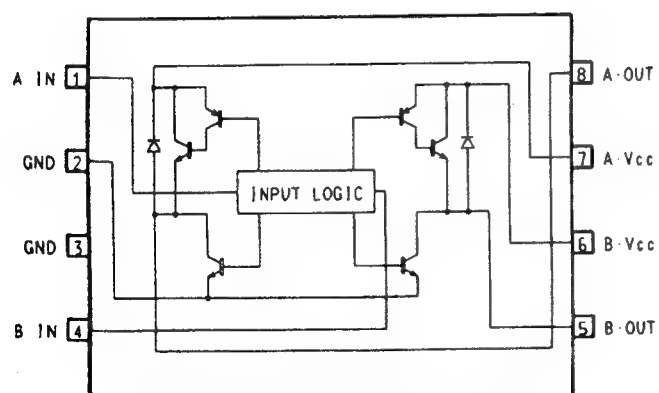
Pin No.	Pin Name	I/O	Output Format	Function and Operation
71	ADENA	O	C	A/D reference voltage output
72	TESTIN	I		Test program mode input
73	VCC			Back up 5V
74	VREF	I		A/D reference voltage input
75	AVSS			A/D GND
76	CSEL			Compression select
77,78	NC			Not used
79	KD0	I		Analog key input 0
80	KD1	I		Analog key input 1

\*PD5256A



Output Format	Meaning
C	CMOS
NM	Middle resistivity N channel open drain

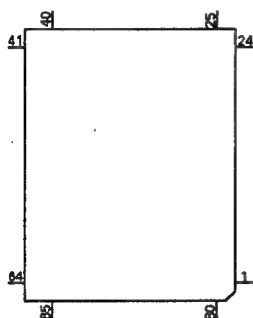
MB3854PF



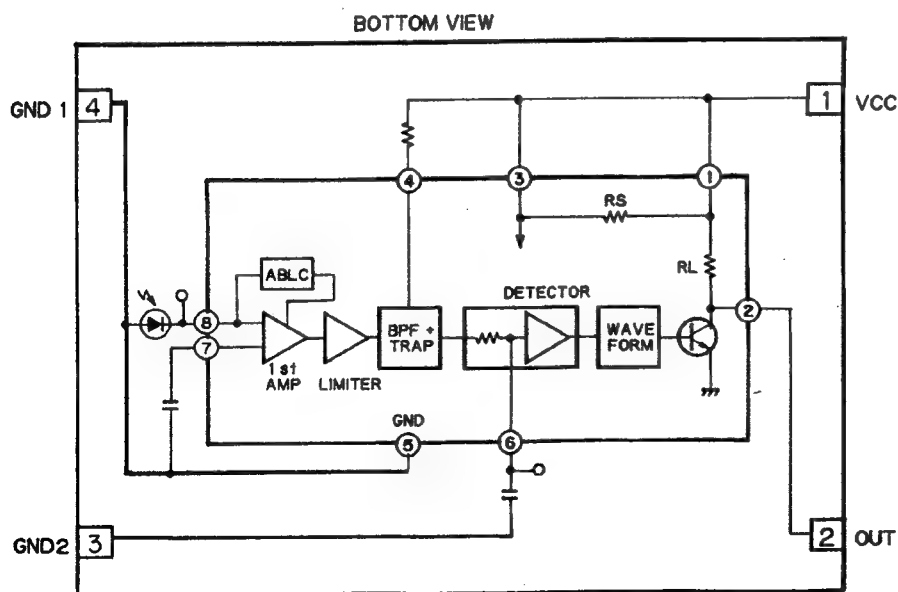
## ●Pin Functions (PD6122A)

Pin No.	Pin Name	I/O	Function and Operation
1	VSS		GND
2	X1		Crystal oscillator connection pin
3	X0		Crystal oscillator connection pin
4	RESET	I	Reset Input
5,6	MOD1,0	I	Model select input
7	DILMX	O	Function LED select output
8	KYDT	O	Key data output
9	DPDT	I	Display data input
10	REMIN	I	Remote control pulse input
11	SILMO	O	Illumination color select output
12	SILMG	O	Function LED select output
13-16	KD4-KD1	I	Key sense input
17-22	KDT6-T	O	Key strobe output
23	VDD		5V
24-34	NC		Not used
35-73	SEG38-0		LCD segment output
74-77	COM3-0	O	LCD common output
78-80	VLCD-V1		Power supply terminal

\*PD6122A



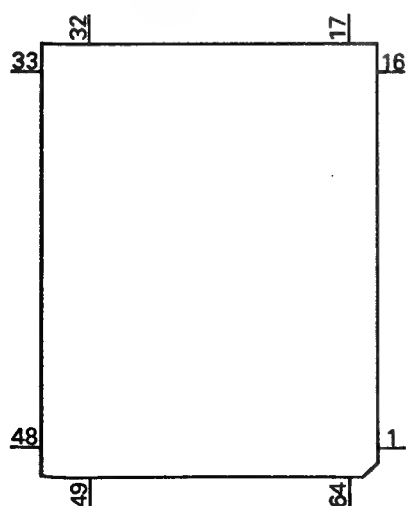
RS-30



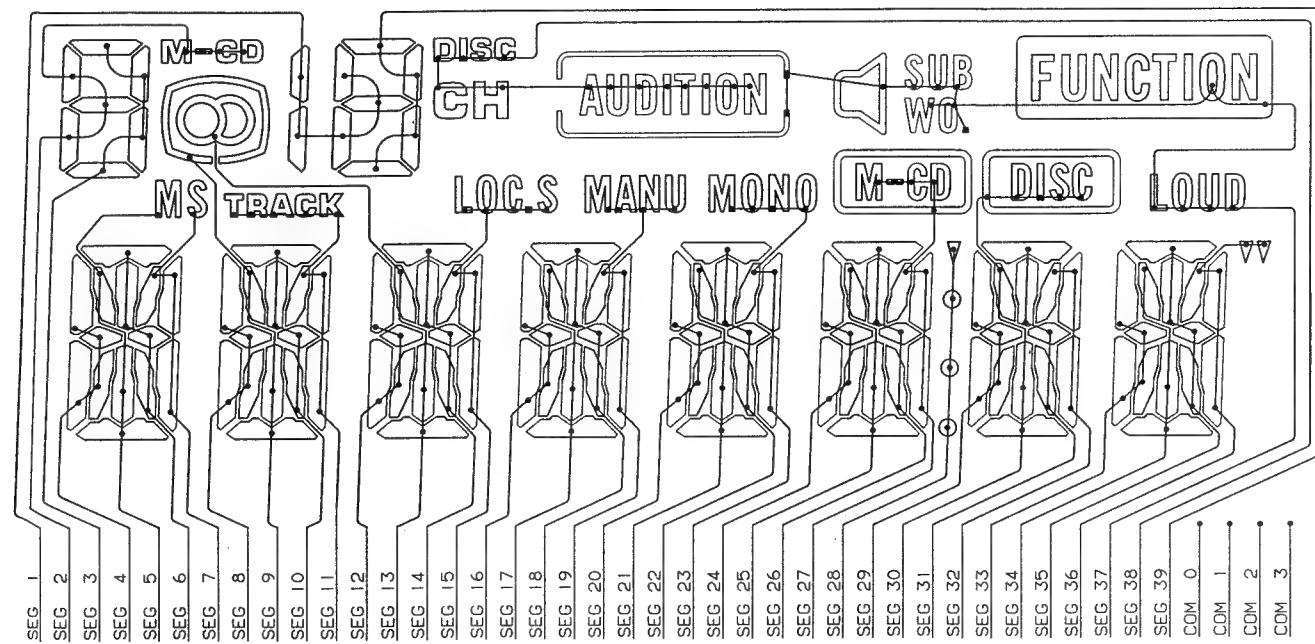
## ●Pin Functions (PD0191A)

Pin No.	Pin Name	I/O	Output Format	Function and Operation
1	RDSEN	I		Enable input from system control IC
2	RDSCK	I		Serial clock input from system control IC
3-6	RSDT7-4	I/O	C	Data input/output to system control IC
7-15	NC			Not used
16	RDSSEL	I		Select input from system control IC
17	TUNSEL	I		FM/AM tuner unit select input
18,19	NC			Not used
20	CNVSS	I		GND
21	RDSRST	I		Reset input from system control IC
22	XIN	I		Crystal oscillating element connection pin
23	XOUT	O		Crystal oscillating element connection pin
24	NC			Not used
25	VSS			GND
26	SCHK	I		Software check input
27-31	NC			Not used
32	RCK	I		RDS demodulation clock input
33	RDТ	I		RDS demodulation data input
34-45	NC			Not used
46	DRST	O	C	Decoder reset output
47	SD	I		SD input
48	SK	I		SK signal input
49	RDSLK	I		RDS LK signal input
50	DK	I		DK signal input
51	ERROR	O	C	Disapprove of error correction output
52	CORR	O	C	Error output
53	RECIVE	O	C	During RDS data reception output
54-56	NC			Not used
57	FZOUT	O	C	Fuzzy control output
58	VCC			5V
59	NC			Not used
60	FZIN	I		Fuzzy level input
61	SL	I		Signal level from tuner
62,63	NC			Not used
64	RDSRDY	O	C	Ready output for system control IC

\*PD0191A



●LCD(CAW1222)(UC,ES Model)  
SEGMENT



COMMON

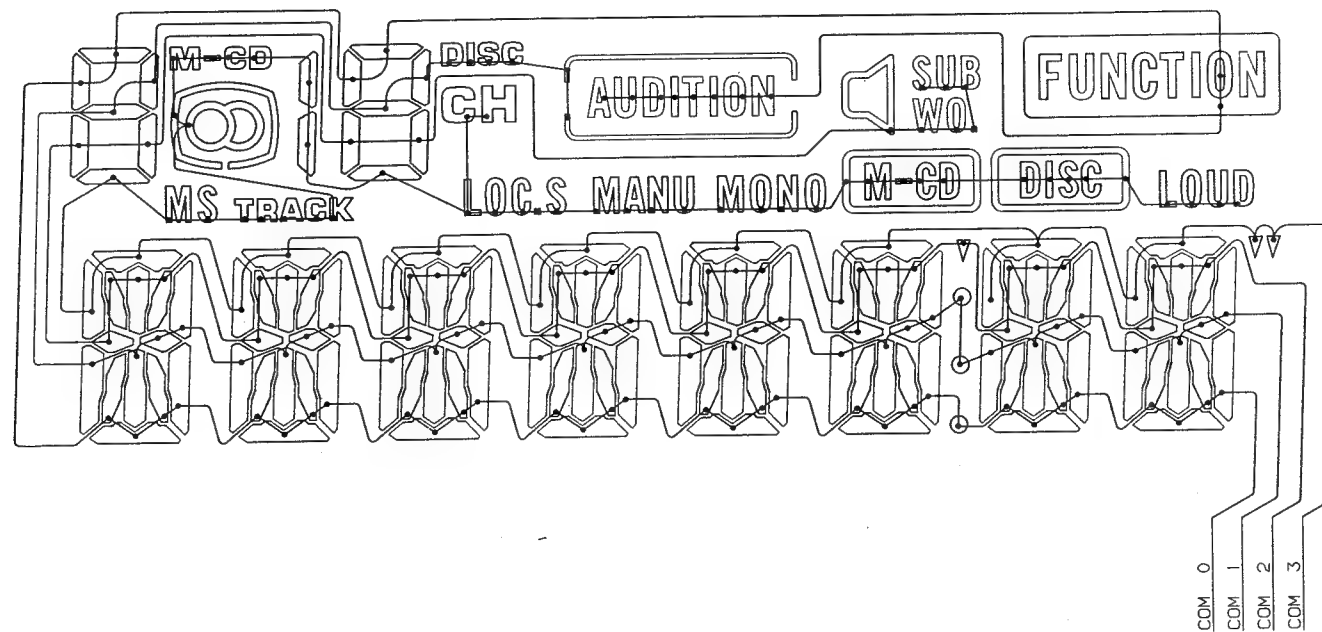
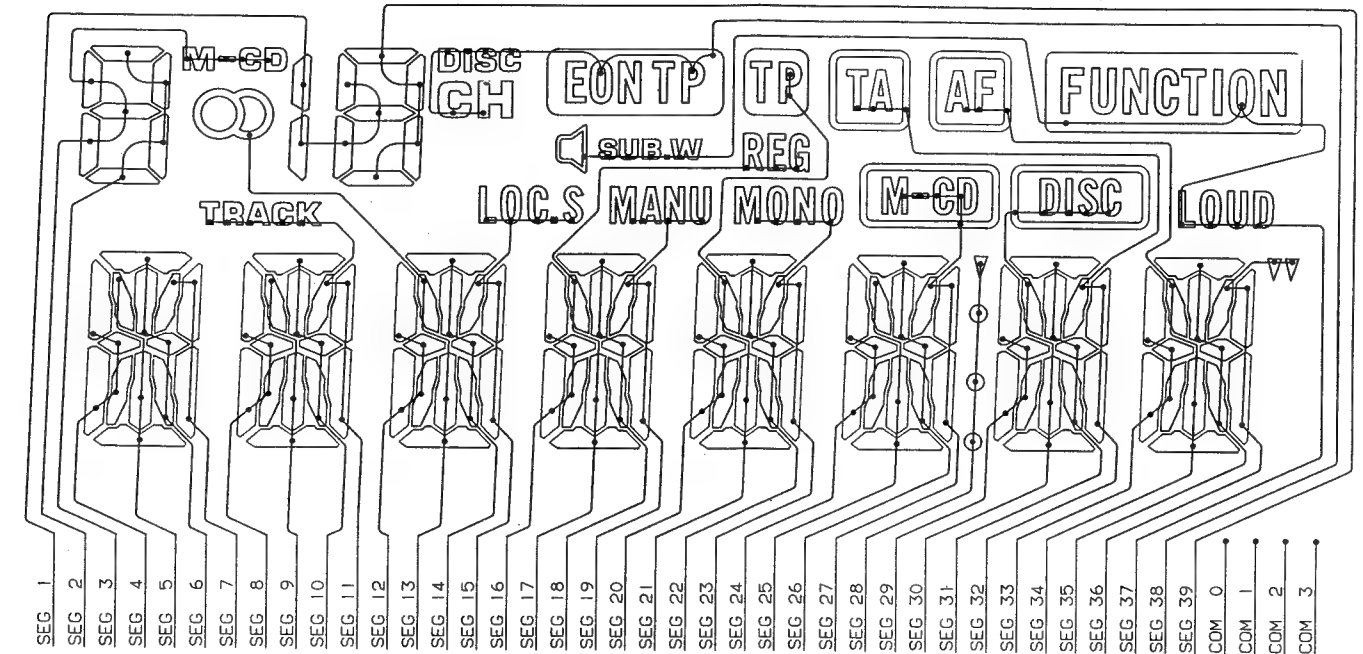


Fig.20

●LCD(CAW1221)(EW Model)  
SEGMENT



COMMON

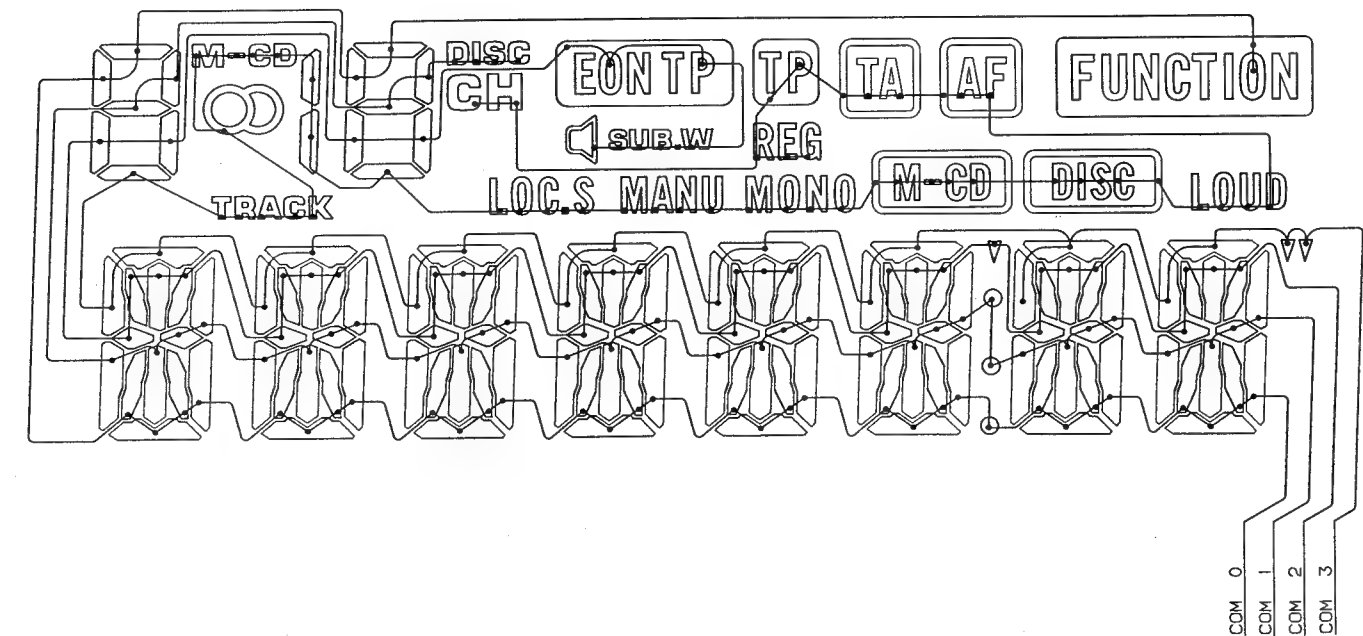


Fig.21

# 5. BLOCK DIAGRAM

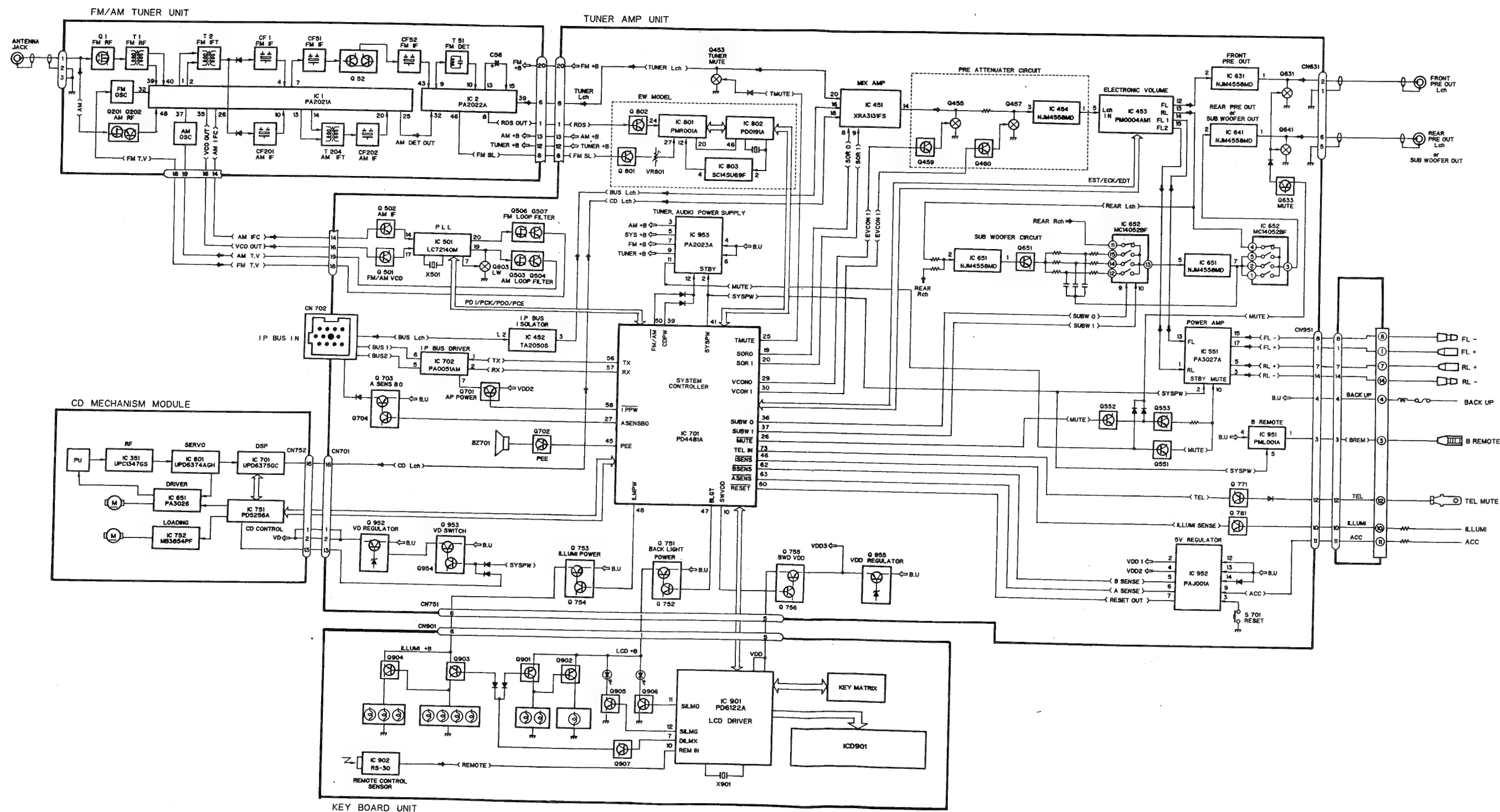


Fig.22

## 6. ADJUSTMENT

### 6.1 CD ADJUSTMENT

#### 1)Precautions

- This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to REFOUT(approx. 2.5V) instead of GND.

If REFOUT and GND are connected to each other by mistake during adjustments, not only will it be impossible to measure the potential correctly, but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this, take special note of the following.

Do not connect the negative probe of the measuring equipment to REFOUT and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to REFOUT with the channel 2 negative probe connected to GND.

And since the frame of the measuring instrument is usually at the same potential as the negative probe, change the frame of the measuring instrument to floating status.

If by accident REFOUT comes in contact with GND, immediately switch the regulator or power OFF.

- Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.
- Before proceeding to further adjustments and measurements after switching regulator ON, let the player run for about one minute to allow the circuits to stabilize.
- Since the protective systems in the unit's software are rendered inoperative in test mode, be very careful to avoid mechanical and/or electrical shocks to the system when making adjustment.

Key	Function
BAND	Regulator ON/OFF
FWD	FWD Kick
REV	REV Kick
7	Tracking close

- Test mode starting procedure

Switch ACC, back-up ON while pressing the 4 and 6 keys together.

- Test mode cancellation

Switch ACC, back-up OFF.

- Disc detection during loading and eject operations is performed by means of a photo transistor in this unit. Consequently, if the inside of the unit is exposed to a strong light source when the outer casing is removed for repairs or adjustment, the following malfunctions may occur.

\*During PLAY, even if the eject button is pressed, the disc will not be ejected and the unit will remain in the PLAY mode.

\*The unit will not load a disc.

When the unit malfunctions this way, either re-position the light source, move the unit or cover the photo transistor.

- When loading and unloading discs during adjustment procedures, always wait for the disc to be properly clamped or ejected before pressing the another key. Otherwise, there is risk of the actuator being destroyed.
- Turn power off when pressing the button FWD or the button REV key for focus search in the test mode. (Or else lens may stick and the actuator may be damaged.)

Key	Function
8	Tracking open
9	Focus close
12	Carriage/Tracking

Press 7,8,9 and 12 keys when the function is on.

- SINGLE/10TRK/32TRK will continue to operate even after the key is released. Tracking closed the moment C-MOVE is released.
- JUMP MODE resets to SINGLE as soon as power is off.

●Flow Chart

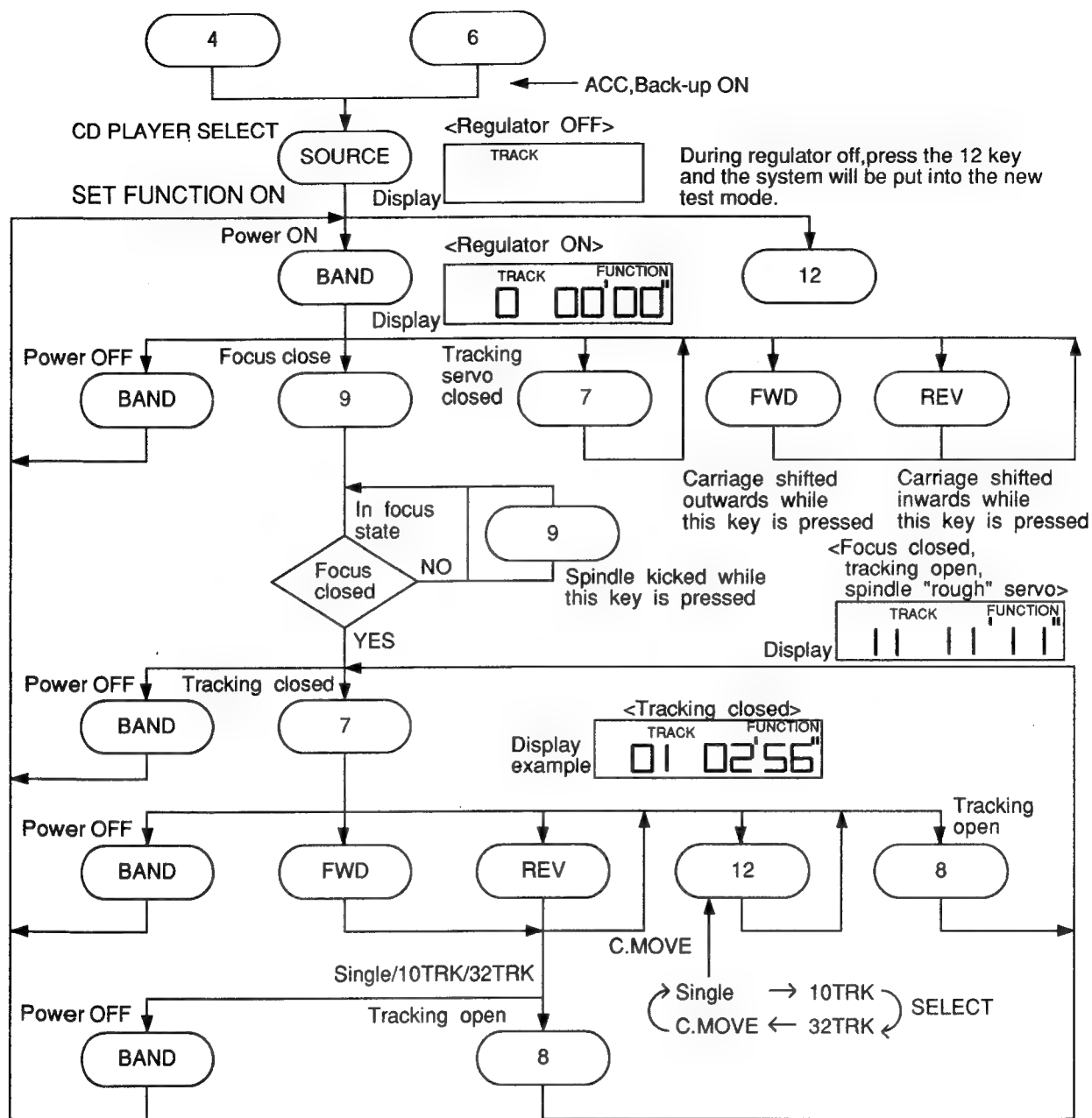


Fig.23

- 7 key(FUNCTION ON MODE)
- 8 key(FUNCTION ON MODE)
- 9 key(FUNCTION ON MODE)
- 12 key(FUNCTION ON MODE)



## ● Measuring Equipment and Jigs

Adjustment	Measuring equipment & jigs
1 Grating Adjustment (Rough adjustment)	Oscilloscope, clock driver, grating adjustment filter (bandpass filter)(GGF133), AC millivoltmeter TCD-782 (or SONY TYPE4) Extension Cable: GGF1132, GGF1135, GGF1128, GGF1126, GGF-070
2 Tangential Skew Check	Oscilloscope, screwdriver TCD-782 (or SONY TYPE 4) Extension Cable: GGF1132, GGF1135, GGF1128, GGF1126, GGF-070
3 Grating Adjustment (Fine adjustment)	Oscilloscope, clock driver, two low-pass filters TCD-782 (or SONY TYPE 4) Extension Cable: GGF1132, GGF1135, GGF1128, GGF1126, GGF-070
4 FE Bias Adjustment	Oscilloscope TCD-782 (or SONY TYPE 4) Extension Cable: GGF1132, GGF1135, GGF1128, GGF1126, GGF-070
5 RF Offset Adjustment	Oscilloscope TCD-782 (or SONY TYPE 4) Extension Cable: GGF1132, GGF1135, GGF1128, GGF1126, GGF-070
6 TE Offset Adjustment-1	DC voltmeter Extension Cable: GGF1132, GGF1135, GGF1128, GGF1126, GGF-070
7 Tracking Balance Adjustment-1	Oscilloscope TCD-782 (or SONY TYPE 4) Extension Cable: GGF1132, GGF1135, GGF1128, GGF1126, GGF-070
8 Focus Servo Loop Gain Adjustment	Oscillator, gain adjustment filter (GGF-065), dual meter milli-voltmeter TCD-782 (or SONY TYPE 4) Extension Cable: GGF1132, GGF1135, GGF1128, GGF1126, GGF-070
9 Tracking Servo Loop Gain Adjustment	Oscillator, gain adjustment filter (GGF-065), dual meter milli-voltmeter TCD-782 (or SONY TYPE 4) Extension Cable: GGF1132, GGF1135, GGF1128, GGF1126, GGF-070
10 TE Offset Adjustment-2	DC voltmeter Extension Cable: GGF1132, GGF1135, GGF1128, GGF1126, GGF-070
11 Tracking Balance Adjustment-2	Oscilloscope TCD-782 (or SONY TYPE 4) Extension Cable: GGF1132, GGF1135, GGF1128, GGF1126, GGF-070

● Adjustment Point

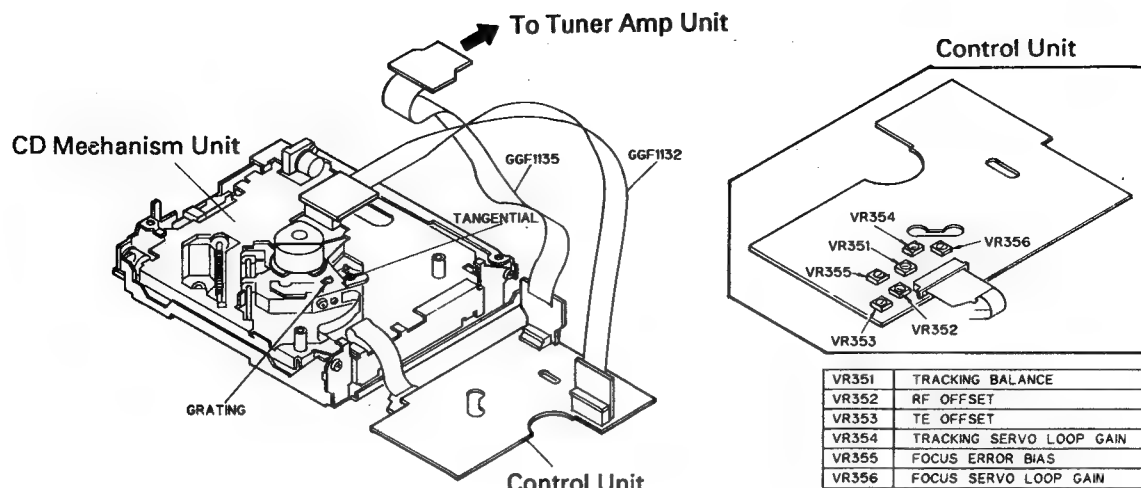
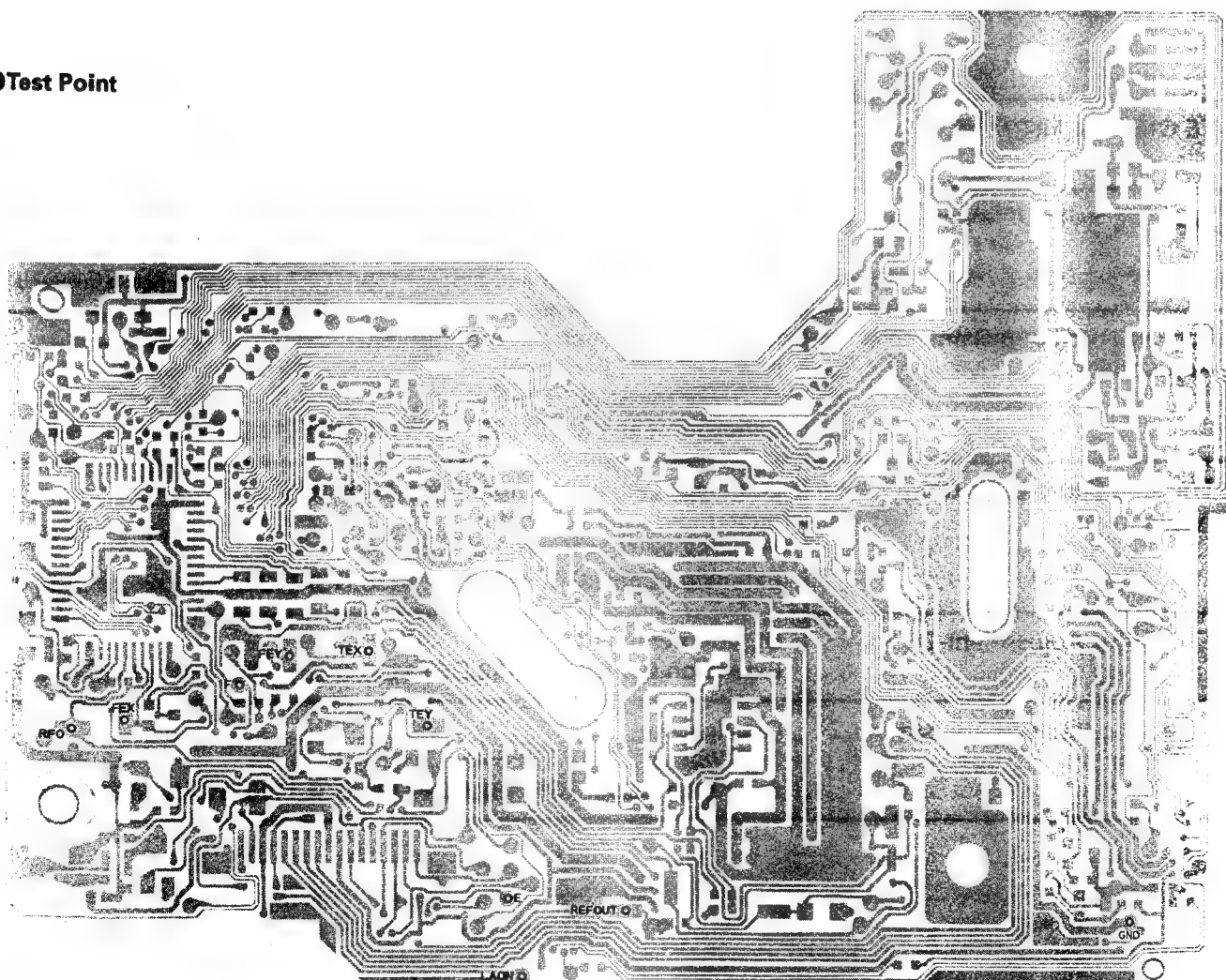


Fig.24

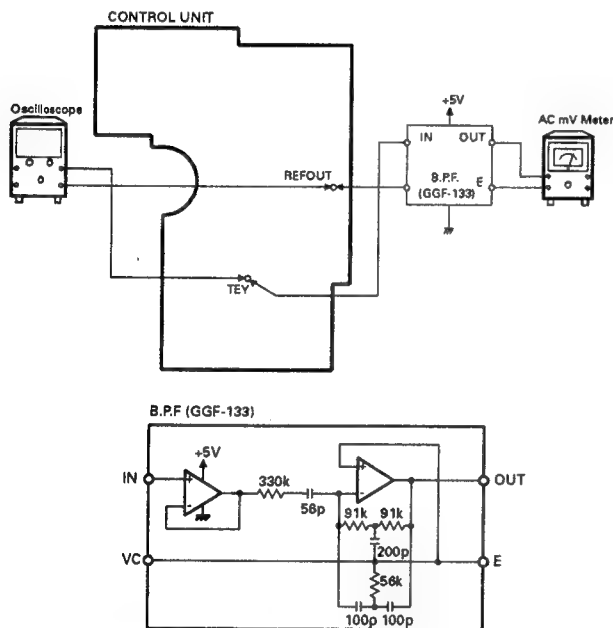
● Test Point



## 1 Grating Adjustment (Rough adjustment)

- **Purpose:**  
The grating may need adjustment in a replaced pick-up unit.
- **Maladjustment symptoms:**  
No disc playback; track jumping.

- **Measuring equipment / jigs**
  - Oscilloscope, clock driver, grating adjustment filter (bandpass filter) (GGF-133), AC millivoltmeter.
- **Measuring point**
  - TEY
- **Test disc and setting**
  - TCD-782 (or SONY TYPE 4)
  - Test mode.
- **Adjustment position**
  - Pick-up grating adjustment hole.



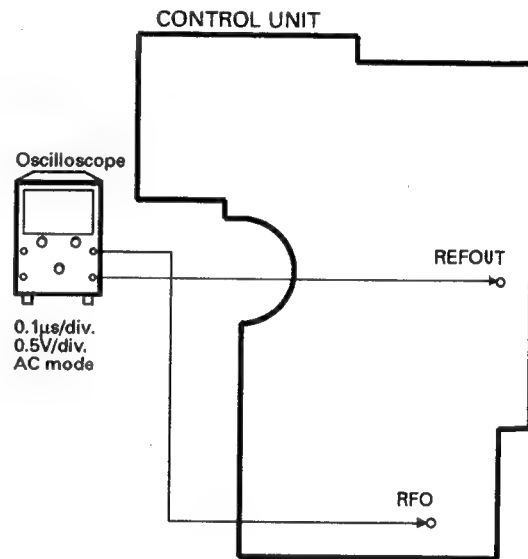
### Adjustment Procedure

1. Switch regulator ON in test mode, and load a disc.
2. Use **FWD** or **REV** key as required to bring pick-up at the adjusting hole on control unit (Tune TNO 19). (TYPE 4:TNO 14)  
Match with TNO 19 (TYPE 4:TNO 14) when releasing the control unit.
3. Press the **9** key to close focus.
4. While monitoring the TEY filter output by AC millivoltmeter, turn the grating adjustment hole slowly. The AC voltage increases and decreases while turning the screw. Search for the minimum voltage level. (This corresponds to the position where the grating is on a track, and is referred to as the null point.)
5. Then while monitoring TEY by oscilloscope, turn the driver slowly clockwise from the null point (as seen from under the pick-up) until the first wave form peak amplitude is reached.

## 2 Tangential Skew Check

- **Purpose:**  
To check whether tangential skew has been misaligned or not when replacing the pick-up unit.
- **Maladjustment symptoms:**  
No disc playback; track jumping.

- **Measuring equipment / jigs**
  - Oscilloscope, screwdriver
- **Measuring point**
  - RFO
- **Test disc and setting**
  - TCD-782 (or SONY TYPE 4)
  - Normal mode
- **Adjustment position**
  - Pick-up tangential adjustment screw



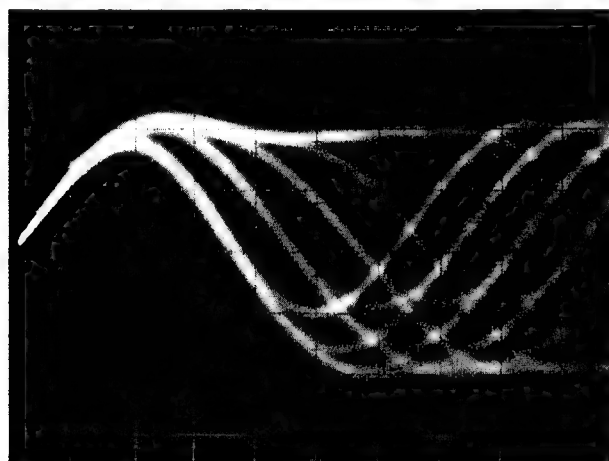
### Adjustment Procedure

1. Check that the pick-up position does not differ from that at the same time of grating adjustment. (TCD-782:TNO19, TYPE 4:TNO 14)
2. Turn the tangential adjustment screw to obtain a good RF waveform eye pattern. Turn the adjustment screw both clockwise and counterclockwise to points where the eye pattern deteriorates, and take the midway point as the adjustment point. As a general guide, look for an overall clear waveform, and one of the diamond shapes in the eye pattern. The diamond shapes should appear in fine lines at the point of optimum adjustment. Take care not to knock the pick-up with the screwdriver at this stage. (This kind of accident can result in loss of focus.) (See Waveform 1, 2)
3. Apply "screw-lock" to the tangential adjustment screw.
4. After adjusting tangential skew, also adjust the grating.



NG

Waveform 1



OK

AC Mode  
0.5V/div.  
0.1μs/div.

Waveform 2

### 3 Grating Adjustment(Fine adjustment)

#### • Purpose:

The grating may need adjustment in a replaced pick-up unit.

#### • Maladjustment symptoms:

No disc playback; track jumping.

#### • Measuring equipment / jigs

• Oscilloscope, clock driver, two low-pass filters

#### • Measuring point

• TEY, ELPF output, FLPF output

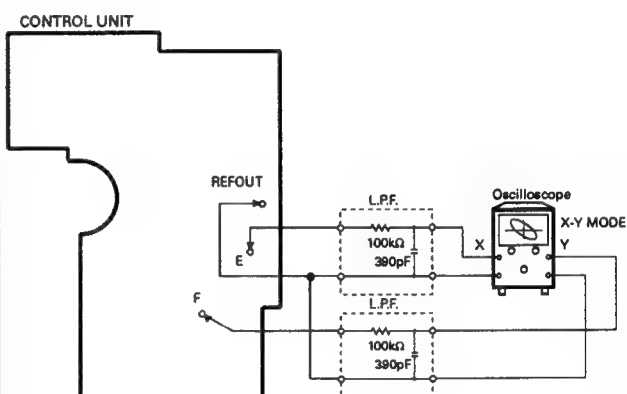
#### • Test disc and setting

• TCD-782 (or SONY TYPE 4)

• Test mode

#### • Adjustment position

• Pick-up grating adjustment hole



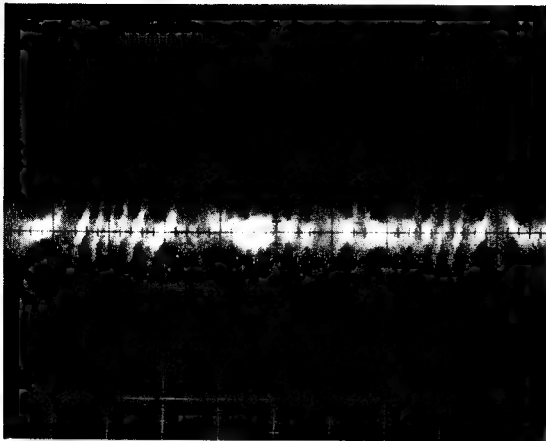
#### Adjustment Procedure

1. Switch regulator ON in test mode, and load a disc.
2. Use **FWD** or **REV** key as required to bring pick-up at the adjusting hole on control unit (Tune TNO 19). (TYPE 4: TNO 14)  
Match with TNO 19 (TYPE 4: TNO 14) when releasing the control unit.
3. Press the 9 key to close focus.
4. With the E low-pass filter output connected to the X axis of the oscilloscope, and the F low-pass filter output connected to the Y axis, apply an input in AC mode and observe the Lissajous figure.  
(See Waveform 3-8)
5. Using the driver, adjust the Lissajous figure to a single line (or as close as possible).
6. Switch regulator OFF and remove the filters.

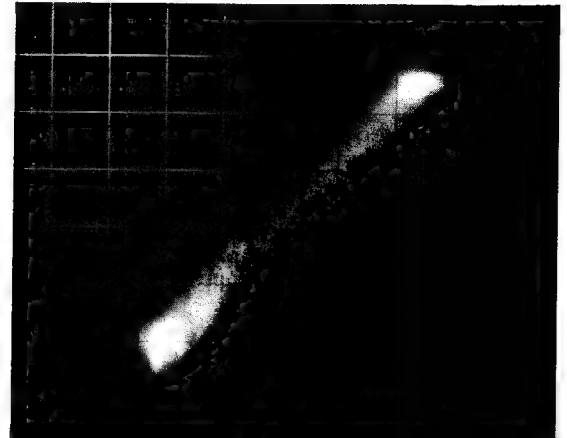
TEY waveform 5ms/div,0.5v/div

Null Point

Lissajous figure (AC input)  
Horizontal axis E 20mV/div.  
Vertical axis F 20mV div.



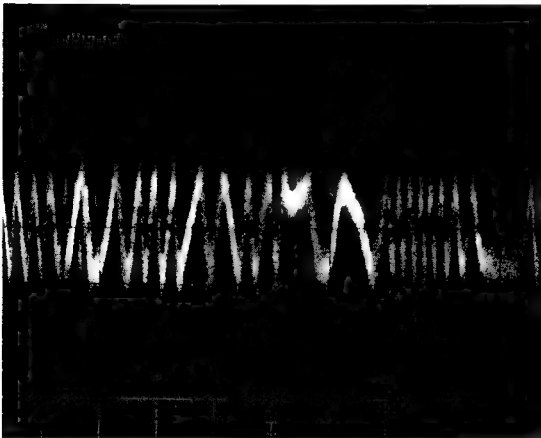
Waveform 3



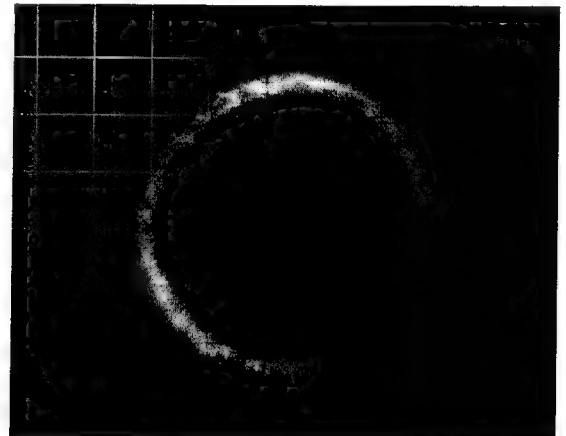
Waveform 4



"Rough" adjustment



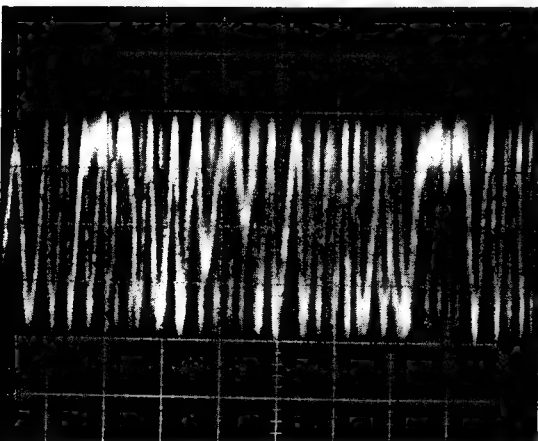
Waveform 5



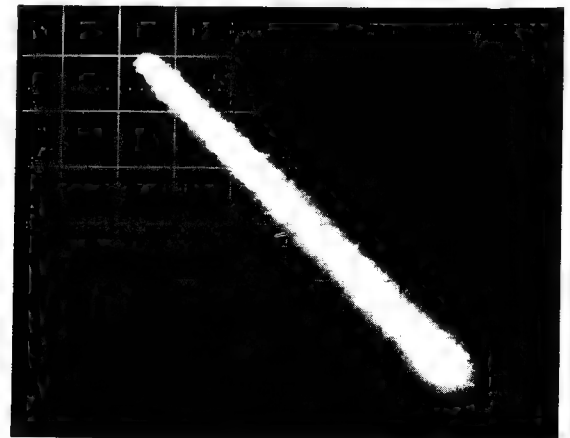
Waveform 6



Final adjustment



Waveform 7



Waveform 8

## 4 FE Bias Adjustment

• **Purpose:**

To adjust the focus servo bias to an optimum value.

• **Maladjustment symptoms:**

Focus closing difficulty, poor playability.

• **Measuring equipment / jigs**

• Oscilloscope

• **Measuring point**

• RFO

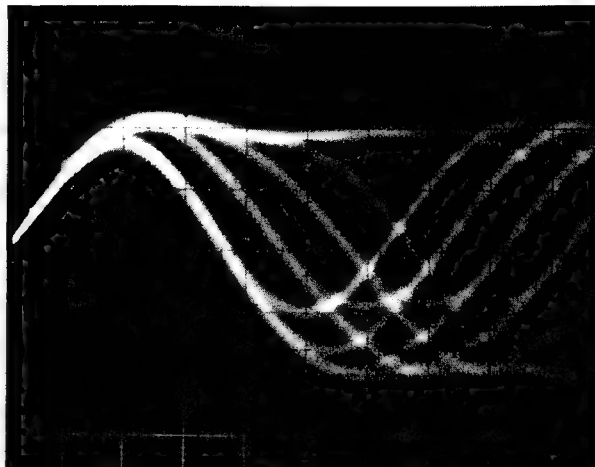
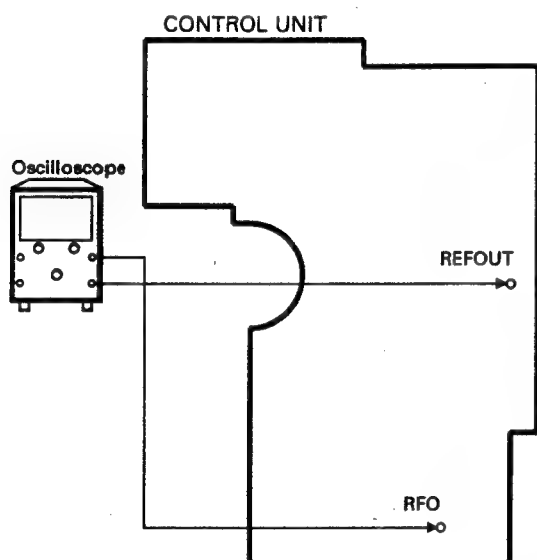
• **Test disc and setting**

• TCD-782 (or SONY TYPE 4)

• Normal mode

• **Adjustment position**

• VR355(FEB)



OK

Waveform 9



NG

AC Mode

Before adjustment

Waveform 10

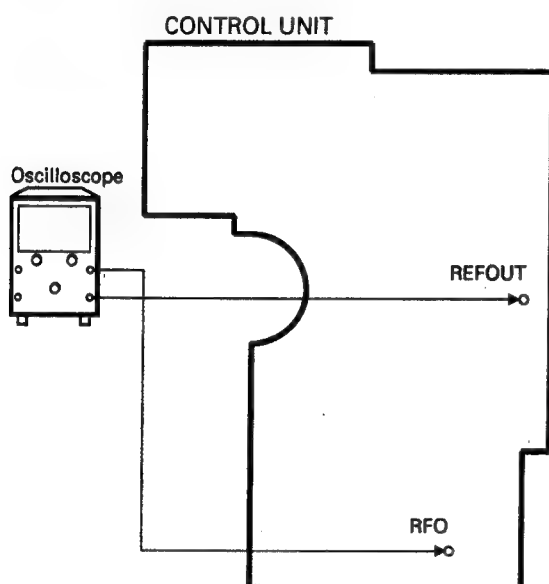
**Adjustment Procedure**

1. Play in normal mode.
2. Observe RFO in respect to REFOUT in the oscilloscope, and adjust VR355(FEB) to obtain maximum RF and eye pattern. (See Waveform 9, 10)

## 5 RF Offset Adjustment

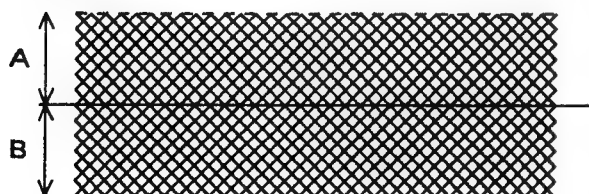
- **Purpose:**  
To adjust the RF amplifier offset to a suitable value.
- **Maladjustment symptoms:**  
Focus closure fails readily.

- |                                     |                            |
|-------------------------------------|----------------------------|
| • <b>Measuring equipment / jigs</b> | • Oscilloscope             |
| • <b>Measuring point</b>            | • RFO                      |
| • <b>Test disc and setting</b>      | • TCD-782 (or SONY TYPE 4) |
|                                     | • Normal mode              |
| • <b>Adjustment position</b>        | • VR352(RFO)               |



### Adjustment Procedure

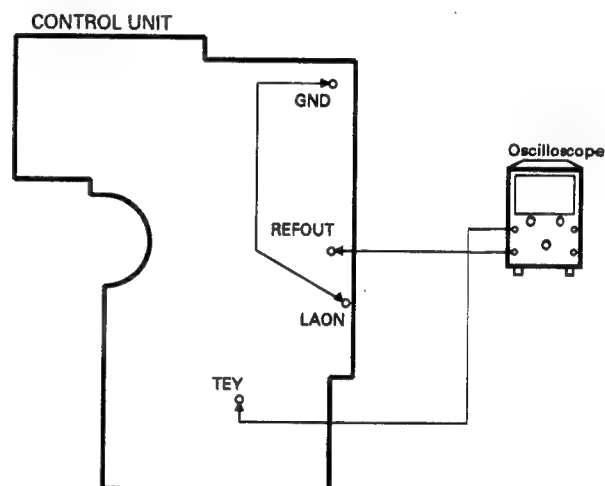
1. Play tune TNO 19 in normal mode.(TYPE 4:TNO 14)
2. Use VR352 to adjust the RFO waveform so that REFOUT appears at the center.(A-B must not exceed 100 mV.)



## 6 TE Offset Adjustment-1

- **Purpose:**  
To adjust the electrical offset of the tracking servo to zero
- **Maladjustment symptoms:**  
Search times too long, carriage run-away.

- |                                     |                |
|-------------------------------------|----------------|
| • <b>Measuring equipment / jigs</b> | • DC voltmeter |
| • <b>Measuring point</b>            | • TEY          |
| • <b>Test disc and setting</b>      | • No Disc      |
|                                     | • Test mode    |
| • <b>Adjustment position</b>        | • VR353(TEO)   |



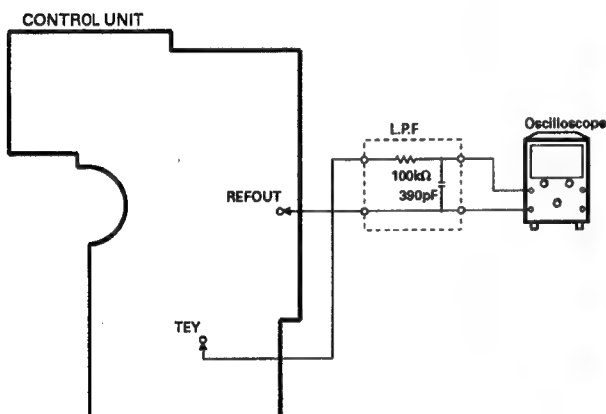
### Adjustment Procedure

1. Connect LAON to GND.
2. Switch regulator ON while in test mode.
3. Using VR353(TEO), adjust the TEY output DC voltage in reference to REFOUT to a value of  $0 \pm 25\text{mV}$ .
4. Switch regulator OFF.

## 7 Tracking Balance Adjustment-1

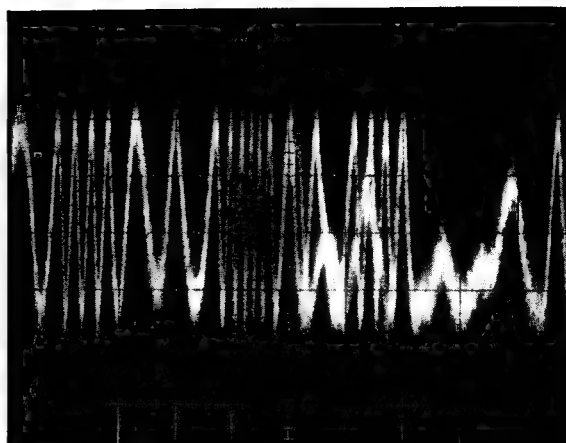
- **Purpose:**  
To adjust the tracking servo offset to zero.
- **Maladjustment symptoms:**  
Search times too long, poor playability, carriage run-away.

- **Measuring equipment / jigs**
- **Measuring point**
- **Test disc and setting**
- **Adjustment position**
- Oscilloscope
- TEY (Tracking error signal)
- TCD-782 (or SONY TYPE 4)
- Test mode
- VR351 (T.BAL)



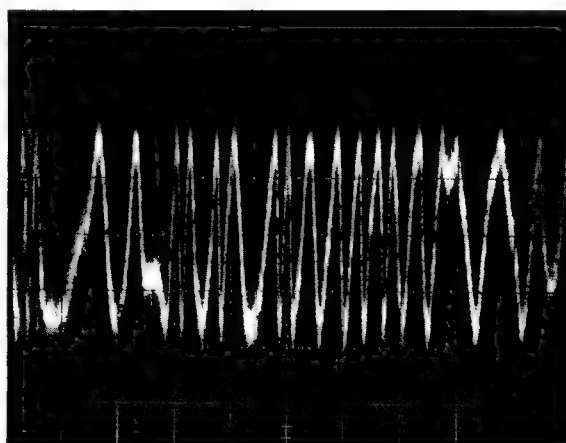
### Adjustment Procedure

1. Set the test disc (TCD-782). Switch regulator ON.
2. Using the **FWD** or **REV** key, move the pick-up to about the center of the signal surface.
3. Press the **9** key to close focus.
4. Using an oscilloscope, observe the TEY signal in respect to REFOUT.  
Then adjust VR351 (T.BAL) to set the positive and negative amplitudes to the same levels.  
(See Waveform 11-13)
5. Switch the power OFF.



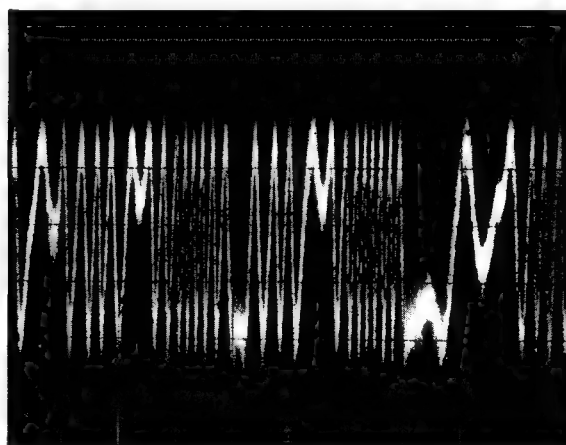
+ 5% NG

Waveform 11



± 0% OK

Waveform 12



- 5% NG

10ms/div.  
0.5V/div.  
DC Mode

Waveform 13

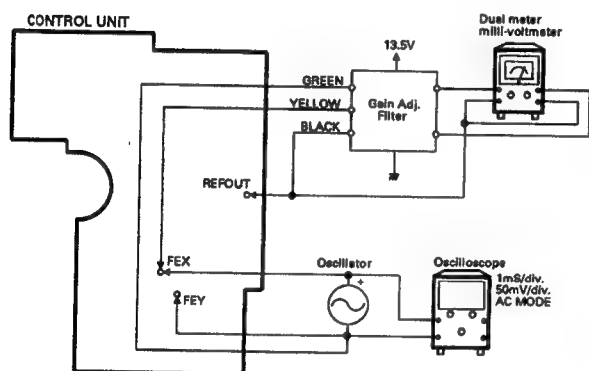


## 8 Focus Servo Loop Gain Adjustment

• **Purpose:**  
To adjust the focus servo loop gain to an optimum value.

• **Maladjustment symptoms:**  
Poor playability, reduced resistance to vibration, focus closure fails readily.

- |                                     |  |
|-------------------------------------|--|
| • <b>Measuring equipment / jigs</b> | • Oscillator, gain adjustment filter (GGF-065), dual meter milli-voltmeter |
| • <b>Measuring point</b>            | • FEX, FEY   |
| • <b>Test disc and setting</b>      | • TCD-782 (or SONY TYPE 4)   |
|                                     | • Normal mode  |
| • <b>Adjustment position</b>        | • VR356(FG)  |



### Adjustment Procedure

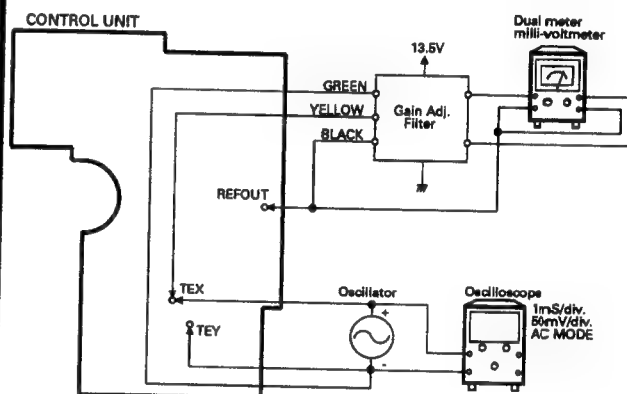
1. After checking that the power is OFF, connect the gain adjustment filter and measuring equipment as shown in the above diagram.
2. Play tune TNO 19 in normal mode.(TYPE 4:TNO 14)
3. Set the oscillator to 1kHz, and observe the FEX/FEY output in the oscilloscope. Adjust the oscillator output to obtain a FEX/FEY output of 100mVp-p.
4. Adjust VR356(FG) to obtain a milli-voltmeter difference of  $0 \pm 0.5$ dB.

## 9 Tracking Servo Loop Gain Adjustment

• **Purpose:**  
To adjust the tracking servo loop gain to an optimum value.

• **Maladjustment symptoms:**  
Poor playability, reduced resistance to vibration.

- |                                     |   |
|-------------------------------------|---|
| • <b>Measuring equipment / jigs</b> | • Oscillator, gain adjustment filter (GGF-065), dual meter milli-voltmeter. |
| • <b>Measuring point</b>            | • TEX, TEY  |
| • <b>Test disc and setting</b>      | • TCD-782 (or SONY TYPE 4)  |
|                                     | • Normal mode   |
| • <b>Adjustment position</b>        | • VR354(TG)   |



### Adjustment Procedure

1. After checking that the power is OFF, connect the gain adjustment filter and measuring equipment as shown in the above diagram.
2. Play tune TNO 19 in normal mode.(TYPE 4:TNO 14)
3. Set the oscillator to 1.4kHz, and observe the TEX/TEY output in the oscilloscope. Adjust the oscillator output to obtain a TEX/TEY output of 300mVp-p.
4. Adjust VR354(TG) to obtain a milli-voltmeter difference of  $0 \pm 0.5$ dB.

## 10 TE Offset Adjustment-2

### • Purpose:

To adjust the electrical offset of the tracking servo to zero.

### • Maladjustment symptoms:

Search times too long, carriage run-away.

• Measuring equipment / jigs • DC voltmeter

• Measuring point • TEY

• Test disc and setting • No Disc

• Test mode

• Adjustment position • VR353

### Adjustment Procedure

Same as for TE offset adjustment-1, but with the DC voltage of the TEY output adjusted to  $0 \pm 50\text{mV}$ .

The purpose of this additional adjustment is to correct any deviations generated when carrying out the tracing balance and tracking servo loop gain adjustments after completing TE offset adjustment-1.

## 11 Tracking Balance Adjustment-2

### • Purpose:

To adjust the tracking servo offset to zero.

### • Maladjustment symptoms:

Search times too long, poor playability, carriage run-away.

• Measuring equipment / jigs • Oscilloscope.

• Measuring point • TEY

• Test disc and setting • TCD-782 (or SONY TYPE 4)

• Test mode

• Adjustment position • VR351

### Adjustment Procedure

Steps 1 thru 5 same as tracking balance adjustment-1.

6. Check that the level difference between the positive and negative amplitudes of the TEY signal is within 5% (See Waveform 11-13)). If greater than 5%, adjust with VR351.

7. If further adjustment was necessary in step 6, repeat TE offset adjustment-2.

### ●New Test Mode (aging operation and setup analysis)

The CD, either single or multiple, plays in the normal mode. After being set up, it will display FOK (focus), LOCK (spindle), subcode, sound skip, protection against a mechanical error or the like, occurrence of an error, cause and time of an expiry, if any, (and disc number in the multi-mode).

During the setup, the CD software operation status (internal RAM and C-point) is displayed. The software on the head unit side does not involve any special problem but runs normally.

#### (1) How to Put in the NEW TEST Mode

See the test mode flow chart page 1-30.

#### (2) Relations of keys between TEST and NEW TEST Modes.

P-BUS Commands IP-BUS Commands	Keys	Test Mode  Regulator OFF	Regulator ON	New Test Mode  Play in progress	New Test Mode  Error Protection } Talking place
B0 15 00	BAND	Regulator ON	Regulator OFF	—	Time of occurrence Cause of error } Selected
B1 15 01	FWD	—	FWD-KICK	TRACK+/FWD	—
B2 15 02	REV	—	REV-KICK	TRACK-/REV	—
B3 15 03	7	—	TRACKING CLOSE	—	—
B4 14 04	8	—	TRACKING OPEN	MODE	—
B5 15 05	9	—	FOCUS CLOSE	—	—
B6	—	—	FOCUS OPEN	RANDOM	—
B7	—	—	Jump-OFF	—	—
B8 15 08	12	To new Test Mode	Jump-Mode selected	A/M	Occurrence T.No Time of occurrence } Selected

7,8,9 and 12 keys(FUNCTION ON MODE)

Operations, such as EJECT, CD ON/OFF, etc. are to be performed normally

#### (3)Error Cause (Error Number) Code

Error Code	Classification	Mode	Description	Cause/Detail
40	ELECTRIC	PLAY	FOK=L100ms	Put out of focus Spindle unlocked Subcode fails to read Last address memory operated Sca, Stain, Vibration, Servo defect, etc...
41	ELECTRIC	PLAY	LOCK=L100ms	
42	ELECTRIC	PLAY	Subcode unacceptable 500ms	
43	ELECTRIC	PLAY	Sound skipped	

\*The error code is identical with those in the normal mode.

#### (4) Indicating an Operation Status During Setup

Status No.	Description	Protection operation
01	Carriage home mode started	None
02	Carriage moving on the internal circumference	10-second time out
03	Carriage moving on the external circumference	10-second time out
11	Setup started	None
12	Spindle turn/Focus search started	None
13	Waiting for focus closing	Failure to focus closing
14	Spindle kicked and focus checked	Out of focus
15	Tracking closed and focus checked	Out of focus
17	Carriage closed and focus checked	Out of focus
18	Lock subcode } Waiting	Failure to lock, Subcode failed to read out of focus
19	End	None

#### (5) Example of 7-segment Display.

##### (a) SET UP in progress

TRACK MIN SEC

11 11 11

While in the TEST MODE, a status number is indicated in TNO, MIN and SEC.

TRACK

11

MIN SEC

11 11

##### (b) Operation (PLAY, SEARCH, etc.) in progress perfectly identical with that in the multi mode.

##### (c) Protection/Error upon occurrence

ERROR-XX While in the error mode, an error number is displayed in MIN and SEC.

Select the display with the BAND key.

TRACK MIN SEC

10 40 05

While in the PLAY MODE, an absolute time is indicated in TNO, MIN and SEC.

TRACK

10

MIN SEC

40 05

➤ Select the display with the 12 key. (When function is on.)

## 6.2 TUNER/AUDIO ADJUSTMENT

### ● Connection Diagram

#### NOTICE:

Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.

Z: Output impedance of SSG.

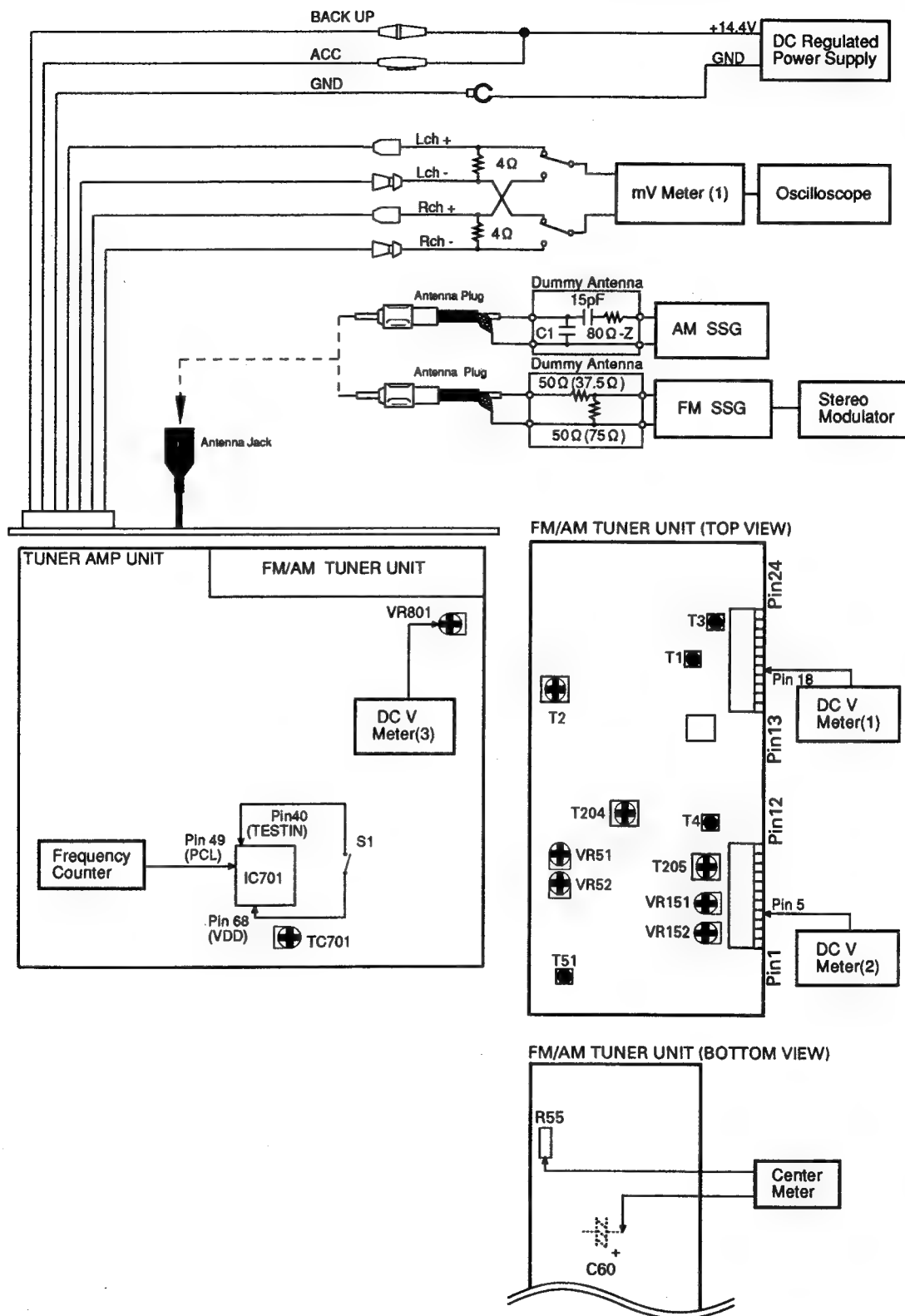


Fig.26

## AM ADJUSTMENT(UC,ES MODEL)

(999) : ES Model tuning steps at 9 kHz

	No.	AM SSG(400Hz,30%)		Displayed Frequency(kHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(kHz)	Level(dB $\mu$ V)			
IF	1	1,000 (999)	20	1,000	T204,T205,	mV Meter(1) : Maximum

## AM ADJUSTMENT(EW MODEL)

	No.	AM SSG(400Hz,30%)		Displayed Frequency(kHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(kHz)	Level(dB $\mu$ V)			
IF	1	999	20	999	T204,T205,	mV Meter(1) : Maximum

## FM ADJUSTMENT(UC,ES MODEL)

(108) : ES Model

Modulation M:MONO MOD., 400Hz 100%(75kHz Dev.)

S:STEREO MOD., 1kHz, L or R=90%, Pilot=10%(67.5kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

	No.	FM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)			
TUN Volt	1	107.9 M (108)	65	107.9	T4	DC V Meter(1) : 6.5V $\pm$ 0.1V
IF	1	98.1 M	65	98.1	T51	Center Meter:0
ANT,RF	1	98.1 M	10	98.1	T1,T3	mV Meter(1) : Maximum
IFT	1	98.1 M	10	98.1	T2	mV Meter(1) : Maximum (AUTO ON)
Soft Mute	1	98.1 M	65	98.1		mV Meter(1) : A (AUTO ON)
	2	98.1 M	15	98.1	VR52	mV Meter(1) : A-3dB
MPX	1	98.1 S	65	98.1	VR152	mV Meter(1) : Separation Maximum
ARC	1	98.1 S	40	98.1	VR151	mV Meter(1) : Separation 5dB
SD	1	98.1 S	22	98.1	VR51	DC V Meter(2) : Approx. 5V

## FM ADJUSTMENT(EW MODEL)

Modulation M:MONO MOD., 400Hz 100%(75kHz Dev.)

S:STEREO MOD., 1kHz, L or R=90%, Pilot=10%(67.5kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

	No.	FM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)			
TUN Volt	1	108.0 M	65	108.0	T4	DC V Meter(1) : 6.5V $\pm$ 0.1V
IF	1	98.1 M	65	98.1	T51	Center Meter:0
ANT,RF	1	98.1 M	10	98.1	T1,T3	mV Meter(1) : Maximum
IFT	1	98.1 M	10	98.1	T2	mV Meter(1) : Maximum (AUTO ON)
Soft Mute	1	98.1 M	65	98.1		mV Meter(1) : A (AUTO ON)
	2	98.1 M	15	98.1	VR52	mV Meter(1) : A-3dB
MPX	1	98.1 S	65	98.1	VR152	mV Meter(1) : Separation Maximum
ARC	1	98.1 S	40	98.1	VR151	mV Meter(1) : Separation 5dB
SD	1	98.1 S	22	98.1	VR51	DC V Meter(2) : Approx. 5V (SEEK:ON)

**FM SL ADJUSTMENT(EW MODEL)**

Modulation MONO MOD., 400Hz 100%(75kHz Dev.)					
No.	FM SSG		Displayed	Adjustment	Adjustment Method
	Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
1	106.1	52	106.1	VR801	DC V Meter(3) : 2.35V±0.05V

**CLOCK ADJUSTMENT(UC,ES MODEL)**

No.	Adjustment Point	Adjustment Method
1		Pin40 of IC701 connect to pin68(VDD)
2	TC701	Frequency Counter : 1.048576MHz±2Hz





Unit Number : CWE1313  
Unit Name : FM/AM Tuner Unit(DEH-P705RDS/EW)

### MISCELLANEOUS

IC	1				PA2021A	R 102	222	RS1/1S822J
IC	2				PA2022A	R 103		RS1/1S822J
Q	1				3SK195			RS1/1S822J
Q	2	202			2SC2712	R 151	152	RS1/1S272J
Q	3				DTC124EU	R 153		RS1/1S103J
						R 154	155 202	RS1/1S103J
Q	51				DTC124TU	R 156		RS1/1S153J
Q	52				2SC4207	R 158		RS1/1S183J
Q	53				2SA1586			
Q	201				2SK435	R 159	216	RS1/1S103J
D	1				1SV172	R 204	213	RS1/1S222J
						R 205		RS1/1S823J
D	2	3	4		KV1410	R 207		RS1/1S225J
D	5				MA151WK	R 208		RS1/1S752J
D	6	151	201	202	MA157			
D	203				SVC203CP	R 209		RS1/1S822J
L	1			Inductor	LCTBR12K2125	R 214		RS1/1S333J
						R 215		RS1/1S330J
L	2	52		Ferri-Inductor	LAU150K	R 218		RS1/1S333J
L	51			Ferri-Inductor	LAU2R2K	R 220		RS1/1S100J
L	201			Ferri-Inductor	LAU4R7K			
L	202			Coil 1mH	CTF1026	R 221		RS1/1S473J
L	203			Inductor	LAU390K	R 223		RS1/1S563J
L	204			Ferri-Inductor	LAU680K			
L	205			Ferri-Inductor	LAU330K			

====Circuit Symbol & No. Part Name=====	Part No.	====Circuit Symbol & No. Part Name=====	Part No.
<b>CAPACITORS</b>			
C 1 54	CCSRCH220J50	IC 551	PA3027A
C 2	CCSRCH390J50	IC 652	MC14052BF
C 3 102 103 154 163 203 210	CKSQYB473K16	IC 701	PD4481A
C 4 12	CCSRCH070D50	IC 702	PA0051AM
C 5 53	CCSRCH270J50	IC 951	PML001A
C 6	CKSRYB222K50	IC 952	PAJ001A
C 7	CCSRCH040C50	IC 953	PA2023A
C 8 105	CKSRYB222K50	Q 453 454	DTC343TK
C 9 16	CCSRCH470J50	Q 455 456 457 458	DTC143TK
C 10	CCSRCH090D50	Q 459 460 954	UN2211
C 11	CKSRYB223K25	Q 501	2SC3098
C 13	CCSRCH070D50	Q 502	2SC3295
C 14	CKSQYB103K25	Q 503 506	2SK208
C 15 22 55 101 151 164 219 220 225 227	CKSQYB104K25	Q 504 507 508	2SC2712
C 17	CCSRCH100D50	Q 551 552 553 704 752 754 756	UN2211
C 18	CCSRCH080D50	Q 631 632	DTC314TK
C 19 20 21 52 62 71 74 201 207	CKSRYB103K50	Q 633	DTA124EK
C 23	CEA3R3M50LL	Q 641 642	DTC314TK
C 24 29 73 106 213	CKSRYB223K25	Q 651 781	2SD601A
C 25	CKSRYB682K50	Q 701 953	UN2111
C 26 28 231	CEA101M16LL	Q 702	DTC124EK
C 51 223	CKSRYB103K50	Q 703 755	2SA1162
C 56 162 211	CEA010M50LL	Q 705	UN2211
C 57 64 66 237	CCSRCH101J50	Q 751 753	2SB1238
C 58	CKSRYB153K25	Q 771	2SA1162
C 60	CEAR47M50LL	Q 952	2SD2396
C 61	CEAR22M50LL	Q 955	2SD1859
C 63	CKSQYB104K25	D 451	MA151K-MH
C 65	CEA0R1M50LL	D 501 502	MA3027H
C 104	CEA4R7M35LL	D 503 771 955	MA151WK-MT
C 152 153	CKSRYB223K25	D 631	MA151WA-MN
C 155	CEAR15M50LL	D 632 958	MA151WK-MT
C 156	CKSQYB563K16	D 701 702	MA3180M
C 158 212	CEA100M16LL	D 703	MA151K-MH
C 159	CCSRCH331J50	D 751 752 753	MA153-MC
C 160	CSZS010M16	D 754 781 953	1SS133
C 161	CKSQYB104K25	D 951 952 954 960 961	ERA15-02VH
C 202	CKSRYB332K50	D 956	HZS9LC3
C 204	CCSRCH120J50	D 959	HZS6LB1
C 205	CCSRCH560J50	L 451	LAU100K
C 206 221	CCSRCH680J50	L 501	Ferri-Inductor
C 208	CEA470M16LL	L 502 701	Ferri-Inductor
C 209 215 228	CKSRYB103K50	IB 551 552	Ferri-Inductor
C 214 230	CKSRYB472K50	X 501	Diode Array
C 216	CCSRCH100D50	X 701	Crystal Resonator
C 217	CCSRCH221J50	S 701	Switch(Reset)
C 218 234	CEA220M16LL	EF 951	Trimmer
C 222	CCSRCH150J50	TC 701	Buzzer
C 224	CCSRCH181J50	BZ 701	FM/AM Tuner Unit
C 226	CEA4R7M35LL	TUN701	
C 229	CEAR68M50LL	<b>RESISTORS</b>	
C 232	CCSRCH390J50	R 426 427 428 429	RS1/10S163J
C 233	CKSRYB332K50	R 430 431	RS1/10S623J
C 235	CKSQYB104K25	R 432 433	RS1/10S513J
C 236	CKSRYB223K25	R 434 435 450 499 500 511 523 526 527 537	RS1/10S472J
		R 436 437 654 655 656 657 658 659 739	RS1/10S104J
Unit Number : CWX1619(DEH-P705/UC)		R 438 439 440 441 459 460	RS1/10S303J
: CWX1726(DEH-P65/UC)		R 442 443	RS1/10S331J
Unit Name : Tuner Amp Unit		R 444 445 451 452 453 454	RS1/10S272J
		R 446 447	RS1/10S103J
		R 448 449	RS1/10S273J
<b>MISCELLANEOUS</b>		R 457 458	RS1/10S163J
IC 451	XRA3131FS	R 461 462	RS1/10S181J
IC 452	TA2050S	R 463 464 479 480 510 513 517 518	RS1/10S102J
IC 453	PM0004AM1	R 465 466 507 647 648 726 763	RS1/10S223J
IC 454 631 641 651	NJM4558MD	R 467 468	RS1/10S153J
IC 501	LC72140M		

====Circuit Symbol & No. Part Name=====	Part No.	====Circuit Symbol & No. Part Name=====	Part No.
R 469 470	RS1/10S163J	R 775 783	RS1/10S473J
R 471 472	RS1/10S222J	R 781 951	RS1/10S103J
R 473 474	RS1/10S303J	R 885 886 971	RS1/10S0R0J
R 475 476	RS1/10S153J	R 952	RS1/10S164J
R 477 478	RS1/10S113J	R 953	RS1/10S683J
R 481 482	RS1/10S561J	R 957	RS1/10S134J
R 483 490 491 492 967	RS1/10S562J	R 958	RS1/10S184J
R 484 485 486 487 509 514 568 570	RS1/10S103J	R 959	RS1/10S472J
R 488 489	RS1/10S153J	R 962 972	RD1/4PS221JL
R 493 494 495 496 543 974	RS1/10S0R0J	R 964	RS1/10S472J
R 497 498	RS1/10S222J	R 965	RS1/10S102J
R 501 573	RS1/10S101J	R 966	RS1/10S104J
R 502	RS1/10S332J	R 969	RD1/4PS220JL
R 503 645 646	RS1/10S821J		
R 504	RS1/10S331J	CAPACITORS	
R 505	RS1/10S680J	C 429 430	CKSQYB102K50
R 506 515 516 524 530 531 532 533 725	RS1/10S222J	C 433 434 435 436 437 438 439 440	CKSQYB822K50
R 508 567 716 968	RS1/10S221J	C 441	CEA470M6R3LL
R 512	RS1/10S152J	C 442 443	CEAR33M50LL
R 519 520 521 544 665 705 706 723 735 736	RS1/10S102J	C 444 445	CKSQYB472K50
R 522	RS1/10S123J	C 446 447 448 457 458 463 464 473 475	CEA100M16LL
R 525	RS1/10S222J	C 449 514 706	CEA4R7M35LL
R 528 534 535 536 709 733 734	RS1/10S473J	C 451 452	CEA010M50LL
R 529	RS1/10S822J	C 453 454	CEA010M50LL
R 538 556 557 558 569 571 722 727	RS1/10S472J	C 455 456	CEA4R7M35LL
R 539 758 955	RS1/10S563J	C 459 460 461 462	CEA010M50LL
R 540	RS1/10S330J	C 465 466	CCSQCH270J50
R 551 552	RS1/10S2R2J	C 467 468	CCSQCH151J50
R 555 751 752 753 754 755 756	RS1/10S472J	C 469 470 647 648	CKSQYB221K50
R 559 560 561 562 563 564 565 566	RS1/10S2R2J	C 471	CEA2R2M50LL
R 572	RS1/10S103J	C 472	CKSQYB103K50
R 631 632 644	RS1/10S153J	C 476 489 490 492 570 635 636 645 646	CEA100M16LL
R 633 634	RS1/10S821J	C 477 478	CKSQYB333K50
R 635 636 954	RS1/10S223J	C 479 480	CKSQYB883K16
R 637 638	RS1/10S103J	C 481 482 483 484	CKSQYB682K50
R 639 640 883 884	RS1/10S0R0J	C 485 486 501	CKSQYB681K50
R 641 642	RS1/10S103J	C 487 488	CKSYB224K16
R 643	RS1/10S153J	C 491	CEA101M10LL
R 651 652	RS1/10S243J	C 493 495 497	CKSYF105Z16
R 660	RS1/10S105J	C 494 496	CEA010M50LL
R 661 662	RS1/10S103J	C 498	CKSYB224K16
R 663	RS1/10S513J	C 499 500 567 568 965	CKSQYB104K16
R 664	RS1/10S333J	C 502 505 507 511 704 781	CKSQYB103K50
R 701	RS1/10S620J	C 503 504 705	CCSQCH101J50
R 702 703	RS1/10S101J	C 506	CCH1005
R 704	RS1/8S103J	C 508	CCG1008
R 707 713	RS1/10S823J	C 510	CFTNA474J50
R 708 714	RS1/10S183J	C 512 516	CKSQYB223K50
R 711	RS1/10S473J	C 513 515	CCSQCH101K50
R 715	RS1/10S822J	C 517	CCSQCH221J50
R 717 718 719 963	RS1/10S221J	C 518 519	CCSQCH120J50
R 720 956	RS1/10S683J	C 520 522	CKSQCH101K50
R 721	RS1/10S392J	C 521	CKSQYB473K16
R 724	RS1/10S563J	C 551 552 553 554	CEA220M6R3LL
R 728	RS1/10S683J	C 555 556 557 558 658 701 702 707	CKSQYB102K50
R 729 731 732	RS1/10S473J	C 559 560 561 562 563 564 565 566	CKSQYB104K16
R 730	RS1/10S682J	C 569	CEA330M16LL
R 737 782 960 961	RS1/10S473J	C 571	CCH1150
R 738	RS1/10S333J	C 572 956	CCH1149
R 757	RS1/10S100J	C 633 634 643 644	CCSQCH121J50
R 759 761 772 773	RS1/10S472J	C 637 638	CKSQYB221K50
R 760 762	RD1/4PS272JL	C 639 640	CKSQYB103K25
R 764	RS1/10S222J	C 652	CKSQYB273K50
R 771	RS1/10S183J	C 653 709 710 711 951 957	CKSQYB473K50
R 774	RS1/10S102J	C 654	CKSQYB223K50

====Circuit Symbol & No. Part Name=====	Part No.
C 655	CKSQYB153K50
C 656	CKSQYB273K50
C 657	CKSQYB103K50
C 659 703	CCSQCH330J50
C 708	CCSQCH120J50
C 712	CKSQYB104K16
C 713	CKSYB224K16
C 751	CKSQYB103K25
C 752 753 754	CKSQYB104K16
C 952	CKSQYB472K50
C 953	CKSQYB473K50
C 954	CKSQYB103K25
C 955	CEAR22M50LL
C 958	CCH-114
C 959	CCH1181
C 960 962	CEA470M10LL
C 961	CEA101M10LL
C 963	CEA220M16LL
C 964	CKSQYB103K50
C 966	CEA2R2M50LL

====Circuit Symbol & No. Part Name=====	Part No.
Unit Number : CWX1616	
Unit Name : Tuner Amp Unit(DEH-P705RDS/EW)	
MISCELLANEOUS	
IC 451	XRA3131FS
IC 452	TA2050S
IC 453	PM0004AM1
IC 454 631 641 651	NJM4558MD
IC 501	LC72140M
IC 551	PA3027A
IC 652	MC14052BF
IC 701	PD4481A
IC 702	PA0051AM
IC 801	PMR001A
IC 802	PD0191A
IC 803	SC14SU69F
IC 951	PML001A
IC 952	PAJ001A
IC 953	PA2023A

Q 453 454	DTC343TK
Q 455 456 457 458	DTC143TK
Q 459 460 705 954	UN2211
Q 501	2SC3098
Q 502	2SC3295
Q 503 506	2SK208
Q 504 507 508 801 802	2SC2712
Q 551 552 553 704 752 754 756	UN2211
Q 631 632	DTC314TK
Q 633	DTA124EK
Q 641 642	DTC314TK
Q 651	2SD601A
Q 701 953	UN2111
Q 702 803	DTC124EK
Q 703 755	2SA1162
Q 751 753	2SB1238
Q 771	2SA1162
Q 781	2SD601A
Q 804	2SC4944
Q 805	2SA1162
Q 952	2SD2396
Q 955	2SD1859
D 451	MA151K-MH
D 501 502	MA3027H
D 503 771 955	MA151WK-MT
D 631	MA151WA-MN
D 632 958	MA151WK-MT
D 701 702	MA3180M
D 703 802	MA151K-MH
D 751 752 753	MA153-MC
D 754 781 953	1SS133
D 801	MA3047M
D 951 952 954 960 961	ERA15-02VH
D 956	HZS9LC3
D 959	HZS6LB1
L 451	LAU100K
L 501	CTF-157
L 502 701	LAU2R2K
L 801 802	LAU101K
IB 551 552	CWW1338
X 501	Crystal Resonator
X 701	Resonator
X 801	Crystal Resonator
S 701	Switch(Reset)
VR 801	Semi-fixed 2.2kΩ (B)

	DEH-P705/UC	DEH-P703/ES	DEH-P605/UC
	CWX1619	CWX1620	CWX1615
	Part No.	Part No.	Part No.
IC631	NJM4558MD	NJM4558MD	.....
IC651	NJM4558MD	.....	.....
IC652	MC14052BF	.....	.....
Q631,632	DTC314TK	DTC314TK	.....
Q651	2SD601A	.....	.....
R631,632	RS1/10S153J	RS1/10S153J	.....
R633,634	RS1/10S821J	RS1/10S821J	.....
R635,636	RS1/10S223J	RS1/10S223J	.....
R637,638	RS1/10S103J	RS1/10S103J	.....
R639,640	RS1/10S0R0J	RS1/10S0R0J	.....
R649	.....	RS1/10S0R0J	RS1/10S0R0J
R650	.....	RS1/10S0R0J	RS1/10S0R0J
R651,652	RS1/10S243J	.....	.....
R654,655,656	RS1/10S104J	.....	.....
R657,658,659	RS1/10S104J	.....	.....
R660	RS1/10S105J	.....	.....
R661,662	RS1/10S103J	.....	.....
R663	RS1/10S513J	.....	.....
R664	RS1/10S333J	.....	.....
R665	RS1/10S102J	.....	.....
R707	RS1/10S823J	RS1/10S563J	RS1/10S823J
R708	RS1/10S183J	RS1/10S433J	RS1/10S183J
R711	RS1/10S473J	RS1/10S303J	RS1/10S433J
R712	.....	RS1/10S683J	RS1/10S563J
R713	RS1/10S823J	.....	RS1/10S823J
R714	RS1/10S183J	RS1/10S473J	RS1/10S183J
R883,884	RS1/10S0R0J	RS1/10S0R0J	.....
R885,886	RS1/10S0R0J	RS1/10S0R0J	.....
C633,634	CCSQCH121J50	CCSQCH121J50	.....
C635,636	CEA100M16LL	CEA100M16LL	.....
C637,638	CKSQYB221K50	CKSQYB221K50	.....
C652,656	CKSQYB273K50	.....	.....
C653	CKSQYB473K50	.....	.....
C654	CKSQYB223K50	.....	.....
C655	CKSQYB153K50	.....	.....
C657	CKSQYB103K50	.....	.....
C658	CKSQYB102K50	.....	.....
C659	CCSQCH330J50	.....	.....

====Circuit Symbol & No. Part Name=====	Part No.	====Circuit Symbol & No. Part Name=====	Part No.
EF 951	CCG1003	R 701	RS1/10S620J
BZ 701	CPV1011	R 702 703	RS1/10S101J
TUN701	CWE1313	R 704	RS1/8S103J
		R 711	RS1/10S473J
		R 715	RS1/10S822J
RESISTORS			
R 426 427 428 429	RS1/10S163J	R 717 718 719 963	RS1/10S221J
R 430 431	RS1/10S623J	R 720 956	RS1/10S683J
R 432 433	RS1/10S513J	R 721	RS1/10S392J
R 434 435 450 499 500 511 523 526 527 537	RS1/10S472J	R 724	RS1/10S563J
R 436 437 654 655 656 657 658 659 739 815	RS1/10S104J	R 728	RS1/10S683J
R 438 439 440 441 459 460	RS1/10S303J	R 729 731 732	RS1/10S473J
R 442 443	RS1/10S331J	R 730	RS1/10S682J
R 444 445	RS1/10S272J	R 737 782 819 840 841 844 845 960 961	RS1/10S473J
R 446 447	RS1/10S103J	R 738	RS1/10S333J
R 448 449	RS1/10S273J	R 757	RS1/10S100J
R 451 452 453 454	RS1/10S0R0J	R 759 761 772 773	RS1/10S472J
R 457 458	RS1/10S163J	R 760 762	RD1/4PS272JL
R 461 462	RS1/10S181J	R 764 820 823	RS1/10S222J
R 463 464 479 480 510 513 517 518	RS1/10S102J	R 771	RS1/10S183J
R 465 466 507 647 648 726 763 842	RS1/10S223J	R 774	RS1/10S102J
R 467 468	RS1/10S153J	R 775 783 843	RS1/10S473J
R 469 470	RS1/10S163J	R 781 951	RS1/10S103J
R 471 472	RS1/10S222J	R 801	RD1/4PS101JL
R 473 474	RS1/10S303J	R 806 807 808 809 811 812 813 814 818 965	RS1/10S102J
R 475 476	RS1/10S153J	R 816 817 831 832 833 835 846 966	RS1/10S104J
R 477 478	RS1/10S113J	R 821	RS1/10S273J
R 481 482	RS1/10S561J	R 822	RS1/10S333J
R 483 490 491 492 967	RS1/10S562J	R 824 825 826 827 834 836 837	RS1/10S681J
R 484 485 486 487 509 514 568 570	RS1/10S103J	R 838	RS1/10S105J
R 488 489	RS1/10S153J	R 839	RS1/10S332J
R 493 494 495 496 543 974	RS1/10S0R0J	R 885 886 971	RS1/10S0R0J
R 497 498	RS1/10S222J	R 952	RS1/10S164J
R 501 573	RS1/10S101J	R 953	RS1/10S683J
R 502	RS1/10S332J	R 957	RS1/10S134J
R 503 645 646	RS1/10S821J	R 958	RS1/10S184J
R 504	RS1/10S331J	R 959	RS1/10S472J
R 505	RS1/10S680J	R 962 972	RD1/4PS221JL
R 506 515 516 524 530 531 532 533 725	RS1/10S222J	R 964	RS1/10S472J
R 508 567 716 968	RS1/10S221J	R 969	RD1/4PS220JL
R 512 810	RS1/10S152J		
R 519 520 521 665 705 706 723 735 736 802	RS1/10S102J	CAPACITORS	
R 522	RS1/10S123J	C 429 430	CKSQYB102K50
R 525	RS1/10S222J	C 431 432	CCSQCH102J50
R 528 534 535 536 708 709 714 733 734	RS1/10S473J	C 433 434 435 436 437 438 439 440	CKSQYB822K50
R 529	RS1/10S822J	C 441	CEA170M6R3LL
R 538 556 557 558 569 571 722 727 803	RS1/10S472J	C 442 443	CEA133M50LL
R 539 758 955	RS1/10S563J	C 444 445	CKSQYB472K50
R 540	RS1/10S330J	C 446 447 448 457 458 463 464 473 475	CEA100M16LL
R 544	RS1/10S102J	C 449 514 706	CEA1R7M35LL
R 561 552	RS1/10S2R2J	C 450	CKSYB224K16
R 555 751 752 753 754 755 756	RS1/10S472J	C 451 452	CEA110M50LL
R 559 560 561 562 563 564 565 566	RS1/10S2R2J	C 453 454	CEA110M50LL
R 572	RS1/10S103J	C 455 456	CEA1R7M35LL
R 631 632 644	RS1/10S153J	C 459 460 461 462	CEA110M50LL
R 633 634	RS1/10S821J	C 465 466	CCSQCH270J50
R 635 636 954	RS1/10S223J	C 467 468	CCSQCH151J50
R 637 638	RS1/10S103J	C 469 470 647 648	CKSQYB221K50
R 639 640 883 884	RS1/10S0R0J	C 471	CEA1R2M50LL
R 641 642	RS1/10S103J	C 472	CKSQYB103K50
R 643	RS1/10S153J	C 476 489 490 492 570 635 636 645 646	CEA100M16LL
R 651 652	RS1/10S243J	C 477 478	CKSQYB333K50
R 660	RS1/10S105J	C 479 480	CKSQYB683K16
R 661 662	RS1/10S103J	C 481 482 483 484	CKSQYB682K50
R 663	RS1/10S513J	C 485 486 501	CKSQYB681K50
R 664 804 805	RS1/10S333J	C 487 488	CKSYB224K16
		C 491	CEA110M10LL

====Circuit Symbol & No. Part Name=====	Part No.
C 493 495 497	CKSYF105Z16
C 494 496	CEA010M50LL
C 498	CKSYB224K16
C 499 500 567 568 965	CKSQYB104K16
C 502 505 507 511 704 781 803 812 816 817	CKSQYB103K50
C 503 504 705	CCSQCH101J50
C 506 4.7 $\mu$ F/16V	CCH1005
C 508 0.047 $\mu$ F	CCG1008
C 510	CFTNA474J50
C 512 516 811 819	CKSQYB223K50
C 513 515	CCSQCH101K50
C 517	CCSQCH221J50
C 518 519	CCSQCH120J50
C 520 522	CKSQCH101K50
C 521	CKSQYB473K16
C 551 552 553 554	CEA220M6R3LL
C 555 556 557 558 658 701 702 707 813	CKSQYB102K50
C 559 560 561 562 563 564 565 566	CKSQYB104K16
C 569	CEA330M16LL
C 571 3300 $\mu$ F/16V	CCH1150
C 572 956 1000 $\mu$ F/16V	CCH1149
C 633 634 643 644	CCSQCH121J50
C 637 638	CKSQYB221K50
C 639 640	CKSQYB103K25
C 652	CKSQYB273K50
C 653 709 710 711 805 951 957	CKSQYB473K50
C 654	CKSQYB223K50
C 655	CKSQYB153K50
C 656	CKSQYB273K50
C 657	CKSQYB103K50
C 659 703	CCSQCH330J50
C 708	CCSQCH270J50
C 712	CKSQYB104K16
C 713	CKSYB224K16
C 751	CKSQYB103K25
C 752 753 754	CKSQYB104K16
C 801 814	CEA100M16LL
C 802	CEA1R5M50LL
C 804	CEAR33M50LL
C 806 815 952	CKSQYB472K50
C 807 808	CSZS010M16
C 809	CSZS3R3M10
C 810	CKSQYB103K50
C 818 964	CKSQYB103K50
C 820 821	CCSQCH180J50
C 823	CEAR47M50LL
C 953	CKSQYB473K50
C 954	CKSQYB103K25
C 955	CEAR22M50LL
C 958 470 $\mu$ F/16V	CCH-114
C 959 330 $\mu$ F/10V	CCH1181
C 960 962	CEA470M10LL
C 961	CEA101M10LL
C 963	CEA220M16LL
C 966	CEA2R2M50LL
C 969 970	CKSYB224K16
Unit Number : CWX1626(DEH-P705/UC,P703/ES)	
: CWX1624(DEH-P705RDS/EW)	
Unit Name : Key Board Unit	
MISCELLANEOUS	
IC 901	PD6122A
IC 902	RS-30
Q 901 902 903 904	2SB1132
Q 905 906 907	UN2211
D 901 902	MA153-MC

====Circuit Symbol & No. Part Name=====	Part No.
D 904	MA151WK-MT
D 918	PRPY1201W
L 901	LCTB1R0K3216
X 901	CSS1084
S 901 902 903 904	Switch
S 905 906 907 908 909 910 911 912 913 914	CSG1041
S 915 916 917 918 919 920 921 922	Switch
IL 901 903 905 907	Lamp
IL 902 906 908 910	Lamp(DEH-P705/UC,P703/ES)
IL 902 906 908 910	Lamp(DEH-P705RDS/EW)
IL 909 911	Lamp
LCD901	LCD(DEH-P705/UC,P703/ES)
LCD901	LCD(DEH-P705RDS/EW)
RESISTORS	
R 901 902	RS1/8S222J
R 904 905 908 909	RS1/8S332J
R 906 907 910 911	RS1/8S472J
R 912 940	RS1/10S102J
R 916 917	RS1/4S821J
R 918 919	RS1/8S471J
R 920	RS1/10S2R2J
R 921	RS1/8S121J
R 922	RS1/10S473J
R 923 924 925 926 927 928 929 930 931 932	RS1/10S471J
R 934	RS1/8S183J
R 938	RS1/10S562J
CAPACITORS	
C 901 902 903 906 909	CKSQYB103K25
C 904 905	CEV100M16
C 907	CKSQYB102K50
C 908	CKSQYB104K16

	DEH-P705/UC	DEH-P605/UC
	DEH-P703/ES	DEH-P65/UC
	CWX1626	CWX1623
	Part No.	Part No.
IC902	RS-30	.....
C905	CEV100M16	.....

Unit Number : CWX1693  
Unit Name : Control Unit

## MISCELLANEOUS

IC 351	UPC1347GS
IC 601	UPD6374AGH
IC 602	XRA4558F
IC 651	PA3026
IC 653	XRA4558F
IC 701	UPD6375GC
IC 702	TC9237F
IC 703	TA2009F
IC 751	PD5256A
IC 752	MB3854PF
Q 351	2SB1260
Q 601	2SB709A
Q 651 652	2SB1184F5
Q 654	DTC114EK
Q 701 702	2SD1781K
Q 704	2SB709A
Q 752 753	DTA114EK
Q 754	DTC114EK
Q 755	2SD1760F5
Q 756	2SD1030

====Circuit Symbol & No. Part Name=====	Part No.	====Circuit Symbol & No. Part Name=====	Part No.
D 651 652	SC016-2	R 766	RS1/16S473J
D 701	MA151WA-MN	R 767 768	RS1/16S224J
D 757	HZM6R8NB2	R 769 770	RS1/16S104J
D 758	MA151A-MA	R 774	RS1/16S103J
L 701 Inductor	LCTBR39K2125	R 775	RS1/16S104J
TH 752 Thermistor	CCX1015	R 778	RS1/16S103J
X 701 Crystal Resonator	CSS1067	R 780	RS1/16S104J
X 751 Ceramic Resonator	CSS1084	R 781 782	RS1/16S362J
VR 351 Semi-fixed 22k $\Omega$ (B)	CCP1183	R 783 784 785 786 787	RS1/16S681J
VR 352 355 356 Semi-fixed 47k $\Omega$ (B)	CCP1185	R 788	RS1/16S102J
VR 353 354 Semi-fixed 2.2k $\Omega$ (B)	CCP1177	R 791 792	RS1/8S391J
Checker Chip	CKF1025	R 794	RS1/16S151J
		R 795	RS1/16S0R0J
		R 799	RS1/10S1R5J
RESISTORS		CAPACITORS	
R 351	RS1/8S100J	C 351	CEV470M16
R 353	RS1/16S623J	C 352	CKSQYB104K16
R 354 757 779	RS1/16S473J	C 353	CEV101M6R3
R 355	RS1/16S122J	C 354 355	CSZSR4R7M10
R 356	RS1/16S683J	C 357 359 366	CKSRVB102K50
R 357	RS1/16S683J	C 358	CKSRVB331K50
R 358 359	RS1/16S332J	C 360	CKSRVB271K50
R 360	RS1/16S684J	C 361	CCSRCH220J50
R 361	RS1/16S153J	C 601	CKSRVB222K50
R 362	RS1/8S120J	C 603	CKSRVB331K50
R 364	RS1/16S102J	C 604 606 652 703 704	CKSYB224K16
R 369	RS1/16S103J	C 605	CKSYB103K25
R 375 377 713	RS1/16S102J	C 607 654 759	CKSYB224K16
R 379	RS1/16S513J	C 608	CSZS010M16
R 380	RS1/16S104J	C 609 610 761	CEV100M16
R 381 382	RS1/16S133J	C 611 701 707 710	CKSRVB103K25
R 601 602 603 604 605 607 610	RS1/16S103J	C 653	CCH1148
R 606	RS1/16S224J	C 655	CKSRVB391K50
R 609 611 612 613 665	RS1/16S102J	C 658	CCH1148
R 614 615	RS1/16S472J	C 665	CEV101M10
R 616	RS1/16S102J	C 666	CKSQYB102K50
R 617	RS1/8S0R0J	C 670	CKSQYB272K50
R 618	RS1/8S103J	C 671	CKSRVB103K25
R 619 620	RS1/8S102J	C 672	CKSQYB333K25
R 652 654	RS1/16S162J	C 702	CEV101M6R3
R 655	RS1/16S183J	C 705 706	CCSRCH090D50
R 656	RS1/16S362J	C 712	CEV220M6R3
R 657	RS1/16S163J	C 716	CEV100M16
R 663	RS1/10S181J	C 722 723	CEV4R7M35
R 664 753 755	RS1/16S103J	C 724	CCSRCH151J50
R 669 797	RS1/16S103J	C 726	CCSRCH100D50
R 670	RS1/10S151J	C 727 728	CKSRVB103K25
R 676	RS1/16S683J	C 751 752 753 754 755	CCSRCH221J50
R 679 684	RS1/16S102J	C 756	CKSRVB472K50
R 701 702 711 712 764	RS1/16S102J		
R 704 705	RS1/16S162J	Unit Number :	
R 707 708	RS1/16S223J	Unit Name : Switch P.C.Board	
R 709 710 729 731	RS1/16S0R0J	D 1 2 3 4 LED	BR461F
R 717	RS1/16S301J	M 1 Motor(Spindle)	CXN1058
R 721	RS1/16S472J	M 2 Motor Unit(Carriage)	CXA4649
R 722	RS1/16S162J	M 3 Motor Unit>Loading)	CXA#267
R 724	RS1/10S1R0J	S 1 2 Switch(Home,Clamp)	CSN1012
R 725	RS1/16S472J		
R 730 733 738 798	RS1/16S0R0J	Unit Number :	
R 751	RS1/10S1R0J	Unit Name : Detector P.C.Board	
R 752	RS1/16S183J	P 1 2 3 4 Photo Transistor	PT400
R 754 776	RS1/16S472J		
R 756 771 772 773	RS1/16S222J	Miscellaneous Parts List	
R 758	RS1/16S224J	PU Unit	CGY 026
R 765 793	RS1/16S102J		

## 8. EXPLODED VIEW PARTS LIST

### NOTE:

- Parts marked by "\*" are generally unavailable because they are not in our Master Spare Parts List.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

### ● Chassis(Exploded View:Page 2-5)

### ● Parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ26P050FMC	41	Battery Cover	CNS2850
2	Screw	BSZ26P080FMC	42	CD Mechanism Module	CXK2544
3	Screw	BSZ26P120FMC	43	Screw	PSS26P080FZK
4	Screw	BSZ30P060FMC	44	Screw	CBA1284
5	Screw	BSZ30P120FMC	45	Handle	CNC4947
6	Cord Assy	CDE4091	46	Bush	CNV1009
7	Fuse	CEK1136	47	Detach Grille Assy	CXA5739
8	Cap	CNS1472	48	Screw	BPZ20P100FZK
9	Resistor	RS1/2P102JL	49	Button	CAC3675
10	Case	CNB1750	50	Button	CAC3676
11	Holder	CNC3850	51	Button	CAC3681
12	Holder	CNC4946	52	Button	CAC3682
13	Earth Plate	CNC5130	53	Button	CAC3683
14	Insulator	CNM3972	54	Button	CAC3684
15	Cushion	CNM3886	55	Button	CAC3685
16	Case	CNS2269	56	Button	CAC3686
17	Cap	CNV2680	57	Spring	CBH1407
18	Holder	CNV3620	58	Cushion	CNM3727
19	Tuner Amp Unit	CWX1616	59	Cover	CNM3752
20	Cord	CDE4097	60	Cover	CNS2751
21	Antenna Cable	CDH1146	61	Lens	CNV3615
22	Plug(CN631)	CKS1242	62	Lens	CNV3616
23	Connector(CN951)	CKM1091	63	Grille Unit	CXA5692
24	Connector(CN751)	CKS2212	64	Button Unit	CXA6162
25	Connector(CN702)	CKS2480	65	Button Unit	CXA6163
26	Holder	CNC4881	66	Key Board Unit	CWX1624
27	Holder	CNC4882	67	Connector(CN901)	CKS2733
28	Bracket	CNC4940	68	Holder	CNC4942
29	Holder	CNC4949	69	Lens	CNV3617
30	Holder	CNC5013	70	Holder	CNV3618
31	Spacer	CNM3343	71	Connector	CNV3642
32	Insulator	CNM3825	72	LCD(LCD901)	CAW1221
33	Heat Sink	CNR1307	73	Screw	BPZ20P060FMC
34	Connector(CN701)	CKS2149	74	Spring	CBH1484
35	FM/AM Tuner Unit	CWE1313	75	Connector	CKS2780
36	Antenna Jack	CKX1043	76	Holder	CNC4943
37	Holder	CNC4880	77	Holder	CNC4944
38	Connector Unit	CXA4720	78	P.C.Board	CNP3473
39	Chassis Unit	CXA5701	79	Arm	CNV3696
40	Remote Control Assy	CXA5961	80	Arm	CNV3697



Mark No.	Description	Part No.
81	Eject Mechanism Assy	CXA5110
82	Panel Unit	CXA5698
83	Screw	PMS20P030FZK
84	IC(IC551)	PA3027A
85	IC(IC953)	PA2023A
86	Transistor(Q952)	2SD2396
87-91	.....	
92	Sheet	CNM3984
93	Earth Plate	CNC5346
94	Cushion	CNM3886
95	Holder	CNC5347
96	Screw	BSZ30P060FMC

●The DEH-P705/UC,DEH-P703/ES,DEH-P605/UC and DEH-P65/UC Parts Lists enumerate the parts which differ from those enumerated in the DEH-P705RDS/EW Parts List only.

The parts other than those enumerated in the former are identical with those in the latter,to which you are requested to refer,accordingly.

The DEH-P705RDS/EW Parts List is given on page 1-54.

No.	Description	DEH-P705RDS/EW	DEH-P705/UC	DEH-P703/ES	DEH-P605/UC	DEH-P65/UC
		Part No.	Part No.	Part No.	Part No.	Part No.
17	Cap	CNV2680	CNV2680	CNV2680	.....	CNV2680
19	Tuner Amp Unit	CWX1616	CWX1619	CWX1620	CWX1615	CWX1726
20	Cord	CDE4097	CDE4119	CDE4120	.....	CDE4303
22	Plug(CN631)	CKS1242	CKS1242	CKS1242	.....	CKS1242
26	Holder	CNC4881	.....	.....	.....	.....
27	Holder	CNC4882	.....	.....	.....	.....
29	Holder	CNC4949	CNC4949	CNC4949	CNC4951	CNC4949
32	Insulator	CNM3825	.....	.....	.....	.....
35	FM/AM Tuner Unit	CWE1313	CWE1312	CWE1312	CWE1312	CWE1312
39	Chassis Unit	CXA5701	CXA5700	CXA5700	CXA5700	CXA5700
40	Remote Control Assy	CXA5961	CXA5961	CXA5961	.....	.....
41	Battery Cover	CNS2850	CNS2850	CNS2850	.....	.....
63	Grille Unit	CXA5692	CXA5694	CXA5695	CXA5696	CXA5693
66	Key Board Unit	CWX1624	CWX1626	CWX1626	CWX1623	CWX1623
72	LCD(LCD901)	CAW1221	CAW1222	CAW1222	CAW1222	CAW1222
82	Panel Unit	CXA5698	CXA6148	CXA6148	CXA5806	CXA5806
87	Cap	.....	.....	.....	CNV2680	.....
88	Cord	.....	.....	.....	CDE4121	.....
89	Plug(CN631)	.....	.....	.....	CKS1238	.....
90	Panel	.....	CNS2906	CNS2906	CNS2786	CNS2786
91	Spring	.....	CBH-865	CBH-865	CBH-865	CBH-865
93	Earth Plate	CNC5346	.....	.....	.....	.....
94	Cushion	CNM3886	.....	.....	.....	.....
95	Holder	CNC5347	.....	.....	.....	.....
96	Screw	BSZ30P060FMC	.....	.....	.....	.....

● CD Mechanism Module(Exploded View:Page 2-7)

● Parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Damper	CNV2882	46	Gear Unit	CXA4265
2	Holder	CNV2863	47	Connector(4P)	CKS2088
3	Screw	CBA1004	48	Switch(S1,2)	CSN1012
4	Spring	CBH1417	49	Screw	CBA1077
5	Frame	CNC3816	50	LED(D1- 4)	BR4361F
6	Guide	CNV2891	51	Gathering P.C.Board	CNX1956
7	Frame	CNC4783	52	Connector(16P)	CKS2064
8	Screw	BMZ20P030FMC	53	Washer	YE20FUC
9	Bracket	CNC4687	54	Arm	CNV2884
10	Screw	BMZ20P040FNI	55	Lever Unit	CXA5093
11	Frame	CNC4686	56	Arm	CNV2885
12	Screw	JFZ20P018FNI	57	Motor(Spindle)	CXM1058
13	Spring	CBL1131	* 58	Support Wheel	CNV2859
14	Bracket	CNC3830	59	Screw	HBA-258
15	Clamper	CNV2864	60	.....	
16	Arm Unit	CXA5090	61	Spring	CBH1414
17	Spring	CBH1415	62	Spring	CBH1424
18	Washer	CBF1039	63	.....	
19	Spring	CBH1418	64	Spring	CBH1410
20	Spring	CBH1419	65	Spring	CBL1129
21	Arm Unit	CXA5091	66	Screw	JFZ20P025FMC
22	Arm	CNV2876	67	Belt	CNT1047
23	Washer	CBF1038	68	Bracket	CNC3832
24	Sheet	CNM3582	69	Holder	CNV2878
25	Gear	CNV2875	70	Spring	CBH1413
26	Spring	CBH1423	71	Cover	CNV2889
27	Arm Unit	CXA5383	72	Holder	CNV3023
28	Photo-transistor	PT4800	73	Chassis Unit	CXA4258
29	Spring	CBH1449	74	Lever	CNV2874
30	P.C.Board	CNP3125	75	Lever	CNC3824
31	Spring	CBH1420	76	Gear	CNV2871
32	Lever	CNC3828	77	Arm	CNC3833
33	Roller	CLA1936	78	Gear	CNV2872
34	Screw	JFZ20P018FNI	79	Gear	CNV2883
35	Spring	CBL1130	80	Gear	CNV2873
36	Arm Unit	CXA6176	81	Gear	CNV2870
37	Sheet	CNM3873	82	Gear	CNV2869
38	Holder	CNV3276	83	Bracket Unit	CXA4261
39	Washer	HBF-132	84	Shaft	CLA2027
40	Spring	CBH1412	85	Motor Unit(Carriage)	CXA4649
41	Roller	CNV2225	86	Holder	CNV2888
42	Short Pin	CBL1010	87	Screw Unit	CXA5384
43	Washer	YE15FUC	88	Screw	CBA1082
44	Arm	CNC3819	89	Washer	CBF1054
45	Spring	CBH1421	90	Gear	CNV2892

Mark No.	Description	Part No.	Mark No.	Description	Part No.
91	Gear	CNV2868	106	Motor Unit>Loading)	CXA4267
92	Bracket Unit	CXA5078	* 107	Connector	CKS2063
93	.....		108	Connector	CKS2149
94	Screw	PMS26P040FMC	* 109	Connector	CKS2121
95	Rack	CNV3268	110	Control Unit	CWX1693
96	Spring	CBH1508	111	Weight	CNC5112
97	Bracket	CNC4436	112	Spring	CBH1458
98	Screw	JFZ17P035FNI	113	Spring	CBH1457
99	Holder Unit	CXA5246	114	Spacer	CNM3315
100	PU Unit	CGY1026	115	CD Mechanism Unit	CXA6196
101	.....		116-118	.....	
102	Spring	CBH1422	119	Screw	CBA1230
103	Holder	CNC4306	120	.....	
104	Screw	JGZ20P070FNI	121	Screw	PMS20P025FMC
105	.....				



# Service Manual

MULTI-CD CONTROL HIGH POWER CD PLAYER WITH FM/AM TUNER

**DEH-P705** UC

**DEH-P65** UC

**DEH-P605** UC

**DEH-P703** ES

MULTI-CD CONTROL HIGH POWER CD PLAYER WITH RDS TUNER

**DEH-P705RDS** EW, X1B/EW

## CHAPTER 2

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## 1. PACKING METHOD

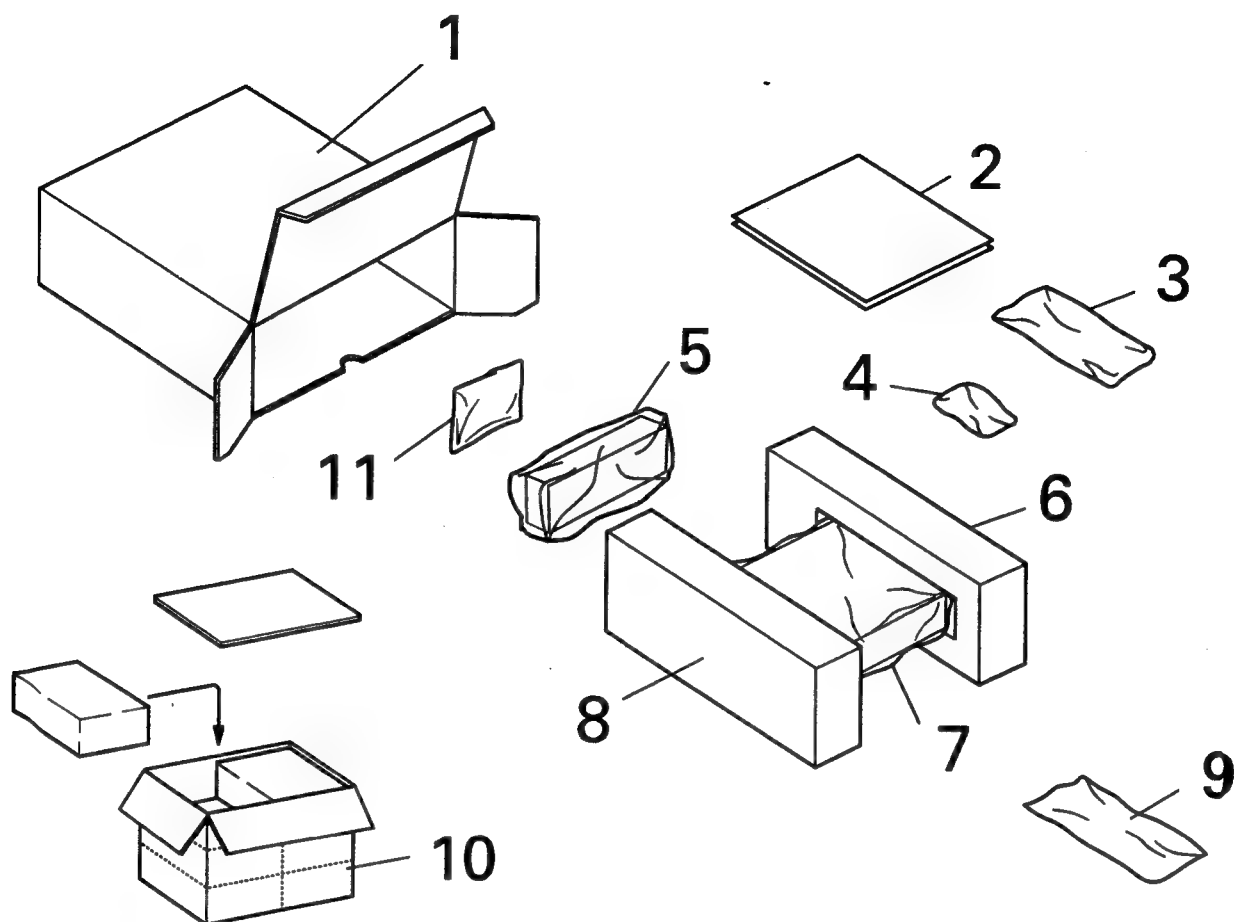


Fig.1

### ● Parts List(DEH-P705RDS/EW)

Mark	No.	Description	Part No.
	1	Carton	CHG2377
	2-1	Owner's Manual	CRD1682
	2-2	Owner's Manual	CRD1683
	2-3	Installation Manual	CRD1684
*	2-4	Card	CRY-062
*	2-5	Passport	CRY1013
	2-6	Polyethylene Bag	CEG1116
	3	Remote Control Assy	CXA5961
	4	Accessory Assy	CEA1473
	4-1	Battery	CEX1006
	4-2	Fastener(Rough)	CNM3629
	4-3	Fastener(Soft)	CNM3630
*	4-4	Polyethylene Bag	CEG-127
	5	Case	CNS2269
	6	Protector	CHP1603

Mark	No.	Description	Part No.
	7	Cover	CEG1092
	8	Protector	CHP1602
	9	Accessory Assy	CEA1917
	9-1	Screw	CBA1284
	9-2	Handle(X2)	CNC4947
	9-3	Bush	CNV1009
*	9-4	Polyethylene Bag	E36-615
	10	Contain Box	CHL2377
	11	Cord Assy	CDE4091

- The DEH-P705RDS/X1B/EW Parts List enumerates the parts which differ from those for the DEH-P705RDS/EW only. The parts other than those enumerated in the DEH-P705RDS/X1B/EW Parts List are identical with those in the DEH-P705RDS/EW parts List, to which you are requested to refer, accordingly. The DEH-P705RDS/EW parts List is given on page 2-2.

Mark	No.	Description	P705RDS/EW -	P705RDS/X1B/EW
			Part No.	Part No.
*	2-4	Card	CRY-062	CRY-063
*	2-5	Passport	CRY1013	CRY1014
	2-6	Polyethylene Bag	CEG1116	E36-618
	4	Accessory Assy	CEA1473	CEA1489
	4-2	Fastener(Rough)	CNM3629	CNM1841
	4-3	Fastener(Soft)	CNM3630	CNM1842
	7	Cover	CEG1092	UEG-001
	10	Contain Box	CHL2377	UHD-002

- The DEH-P703/ES, DEH-P605/UC and DEH-P65/UC Parts Lists enumerate the parts which differ from those enumerated in the DEH-P705/UC Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The DEH-P705/UC parts List is given on page 2-3.

Mark	No.	Description	DEH-P705/UC	DEH-P703/ES	DEH-P605/UC	DEH-P65/UC
			Part No.	Part No.	Part No.	Part No.
	1	Carton	CHG2378	CHG2381	CHG2380	CHG2379
	2-1	Owner's Manual	CRD1685	CRD1686	CRD1685	CRD1737
*	2-2	Card	ARY1048	.....	ARY1048	.....
*	2-3	Warranty Card	.....	.....	.....	CRY1070
	3	Remote Control Assy	CXA5961	CXA5961	.....	.....
	4	Accessory Assy	CEA1473	CEA1473	.....	.....
	4-1	Battery	CEX1006	CEX1006	.....	.....
	4-2	Fastener(Rough)	CNM3629	CNM3629	.....	.....
	4-3	Fastener(Soft)	CNM3630	CNM3630	.....	.....
*	4-4	Polyethylene Bag	CEG-127	CEG-127	.....	.....
	10	Contain Box	CHL2378	CHL2381	CHL2380	CHL2379

● Parts List(DEH-P705/UC)

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Carton	CHG2378		9-2	Screw Assy	CEA1924
	2-1	Owner's Manual	CRD1685		9-2-1	Screw	CBA-102
*	2-2	Card	ARY1048		9-2-2	Screw	CBA1284
	3	Remote Control Assy	CXA5961		9-2-3	Screw(X4)	CRZ50P090FMC
	4	Accessory Assy	CEA1473		9-2-4	Screw(X4)	TRZ50P080FMC
	4-1	Battery	CEX1006		9-2-5	Nut(X2)	NF50FMC
	4-2	Fastener(Rough)	CNM3629	*	9-2-6	Polyethylene Bag	CEG-127
	4-3	Fastener(Soft)	CNM3630		9-3	Handle(X2)	CNC4947
*	4-4	Polyethylene Bag	CEG-127		9-4	Strap	CNF-111
	5	Case	CNS2269		9-5	Bush	CNV1009
	6	Protector	CHP1603	*	9-6	Polyethylene Bag	CEG-158
	7	Cover	CEG1092		10	Contain Box	CHL2378
	8	Protector	CHP1602		11	Cord Assy	CDE4091
	9	Accessory Assy	CEA1918				
	9-1	Spring	CBH-865				

2-1 Owner's Manual

Model	Part No.	Language
DEH-P705RDS/EW	CRD1682	English, French, Italian, German, Dutch
	CRD1683	Swedish, Norwegian, Finnish, Spanish, Portuguese
DEH-P705/UC, DEH-P605/UC	CRD1685	English, French
DEH-P703/ES	CRD1686	English, French, Spanish, Arabic
DEH-P65/UC	CRD1737	English, French

2. EXPLODED VIEW

● Chassis(Parts List: Page 1-54)

A

B

C

D

A

B

C

D

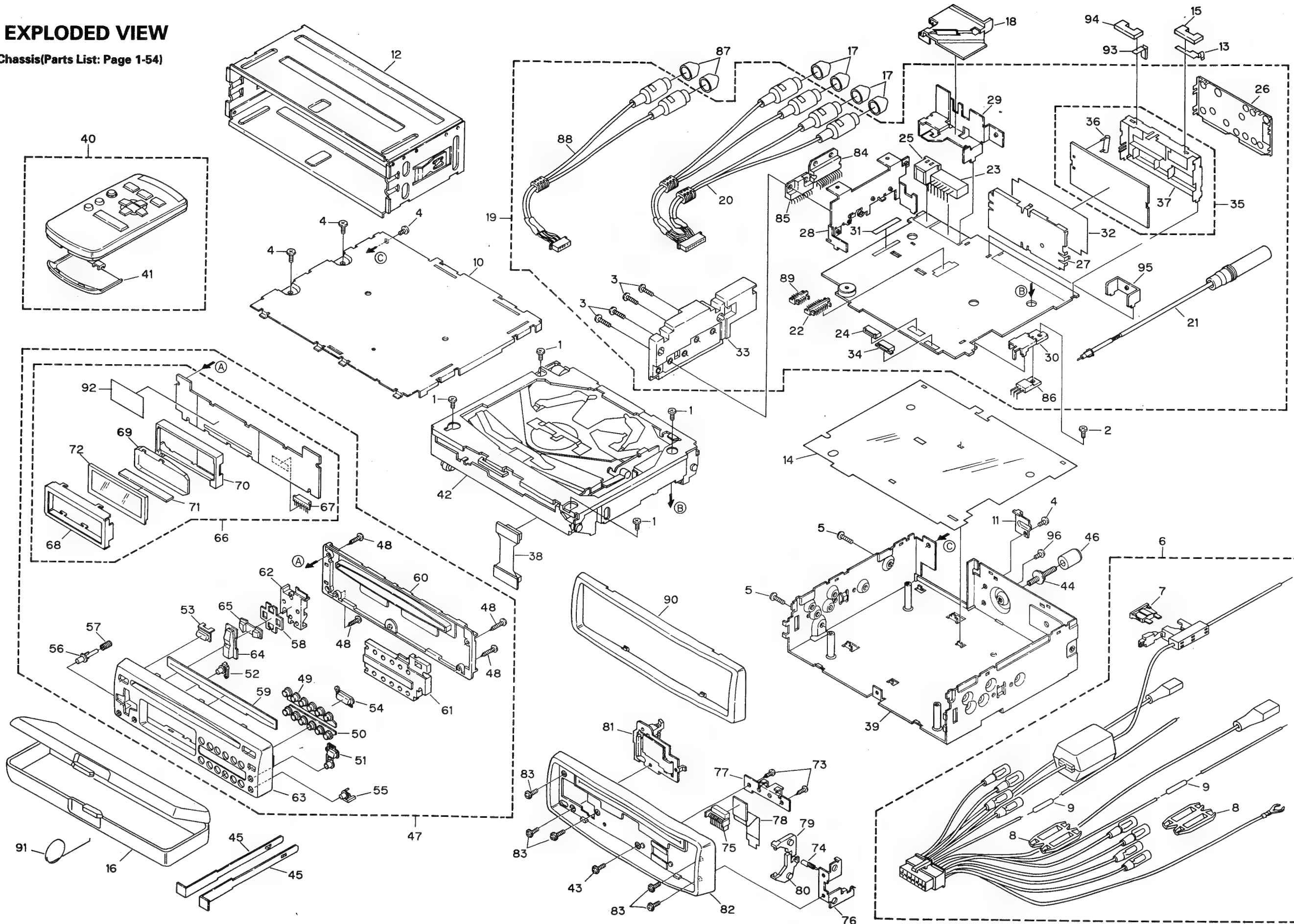


Fig.2



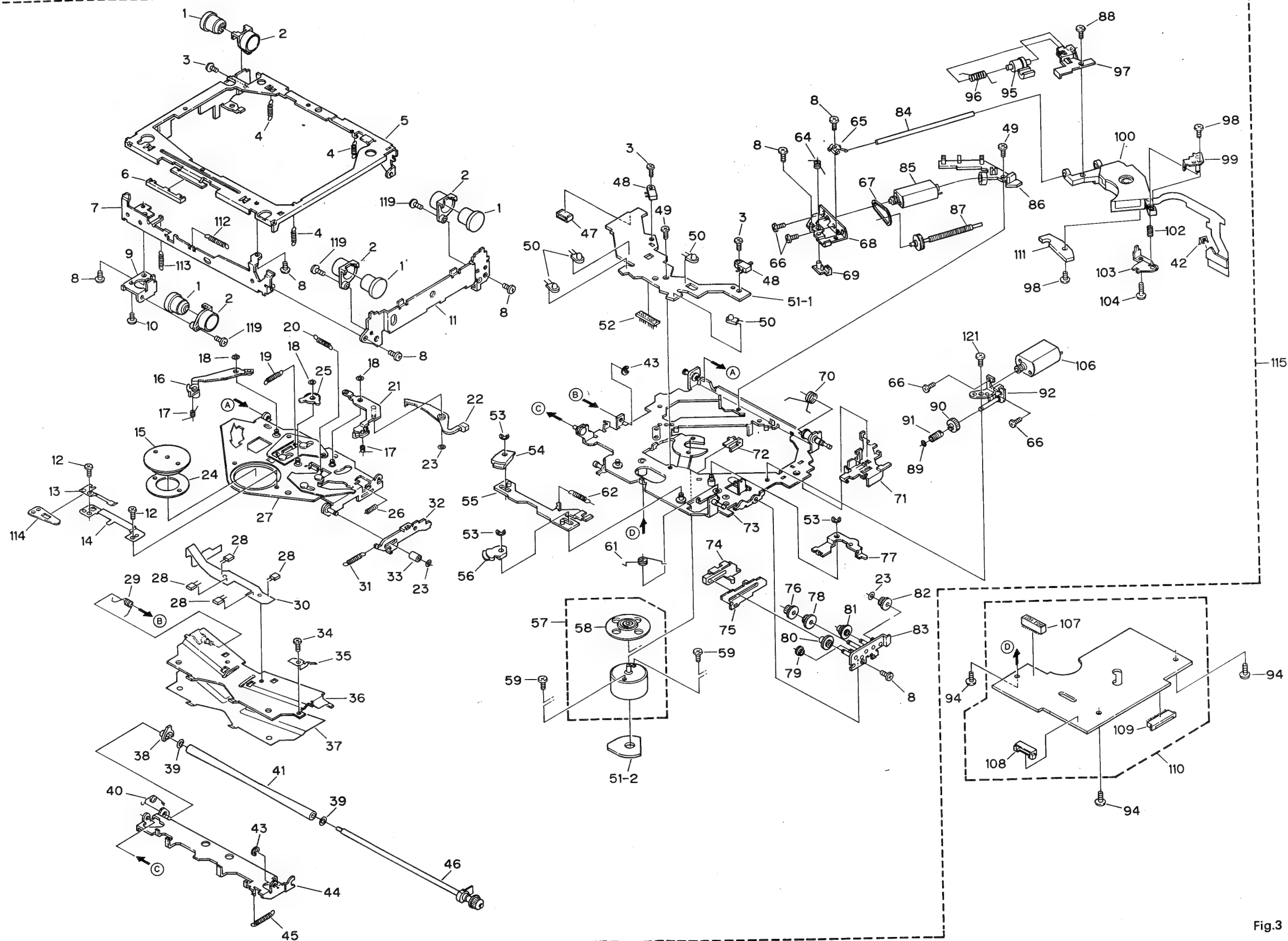


Fig.3

### 3. CIRCUIT DIAGRAM AND PATTERN

#### 3.1 TUNER AMP UNIT(DEH-P705/UC,DEH-P65/UC)

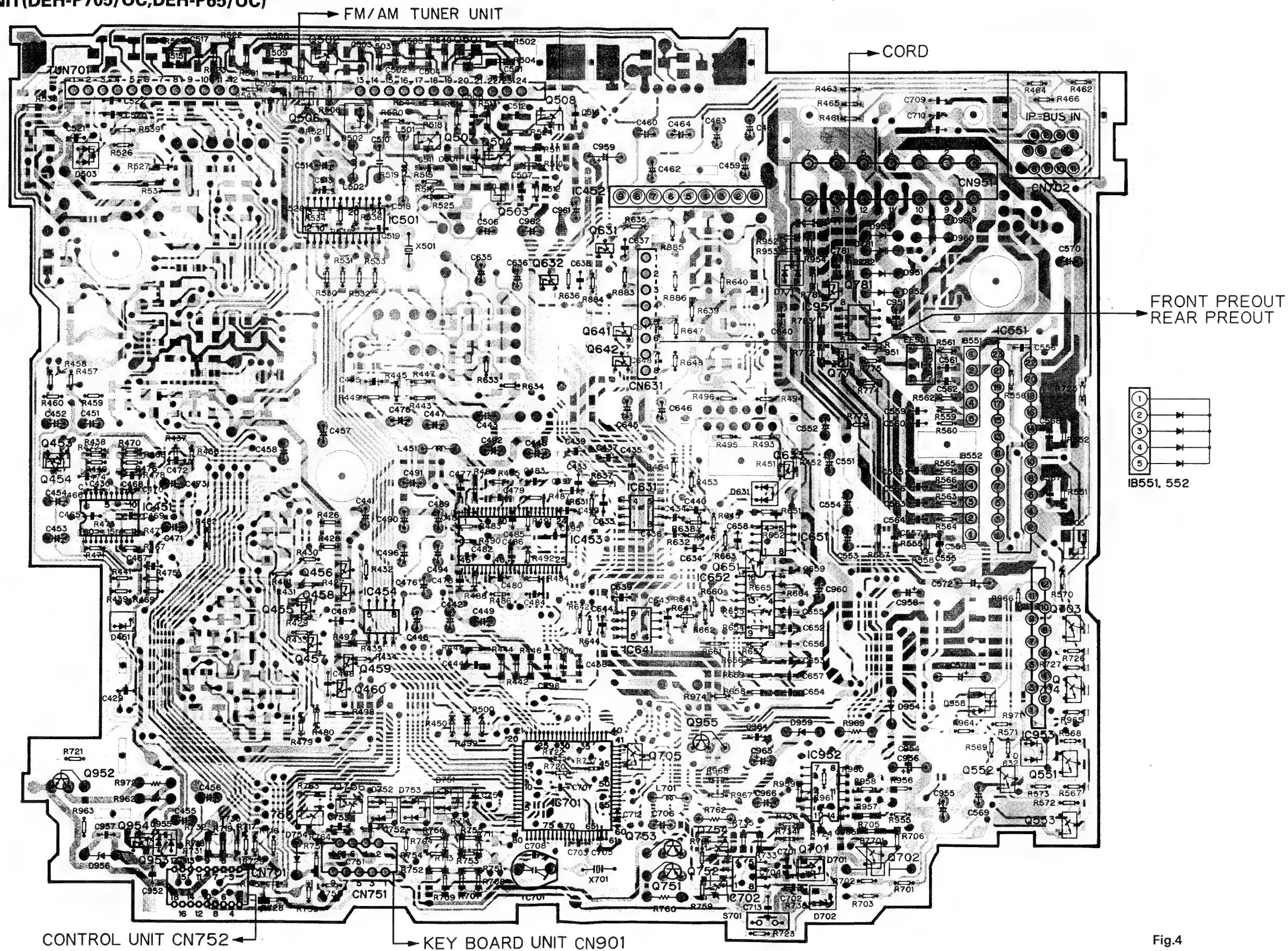
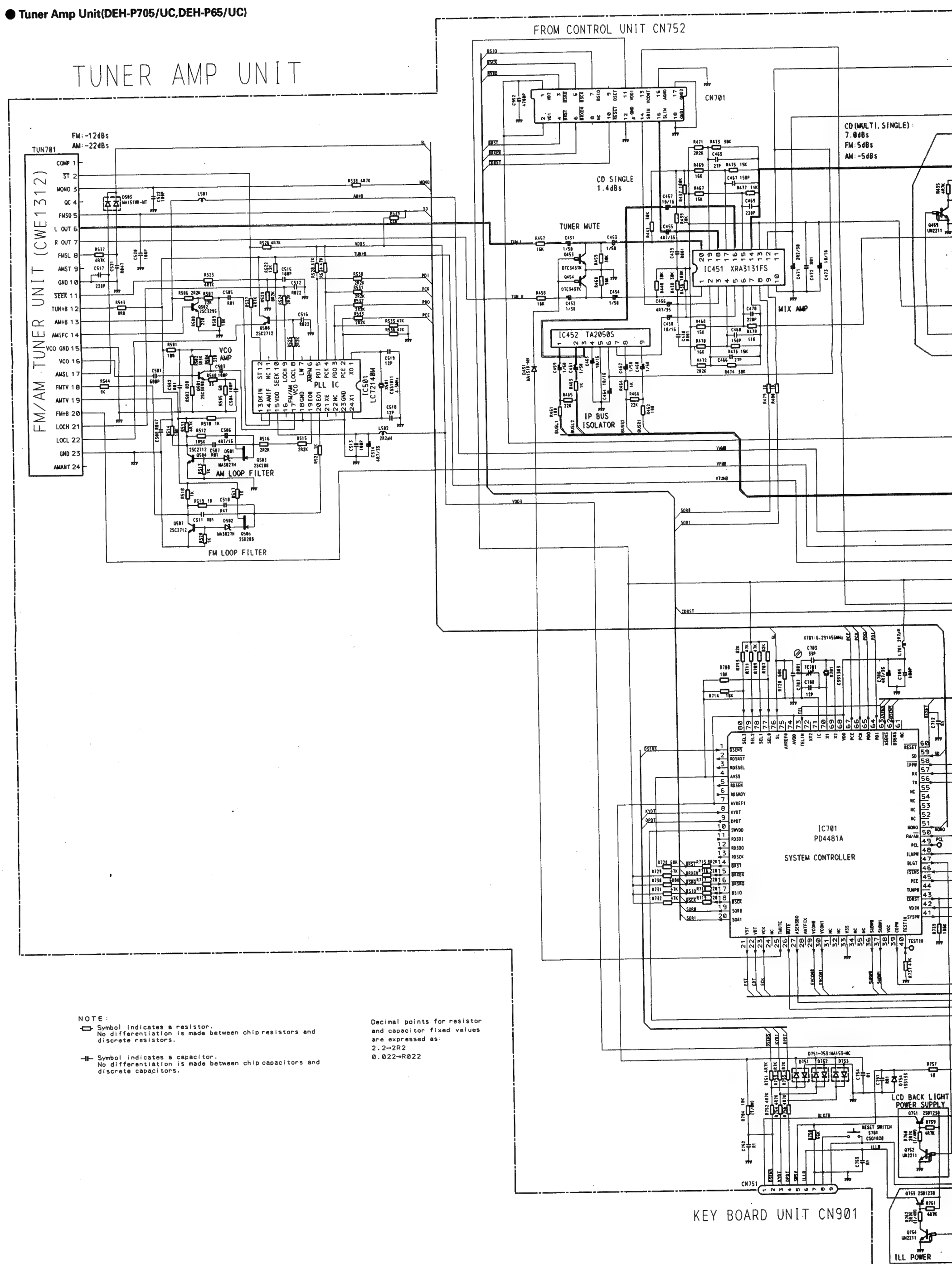


Fig.4

# TUNER AMP UNIT





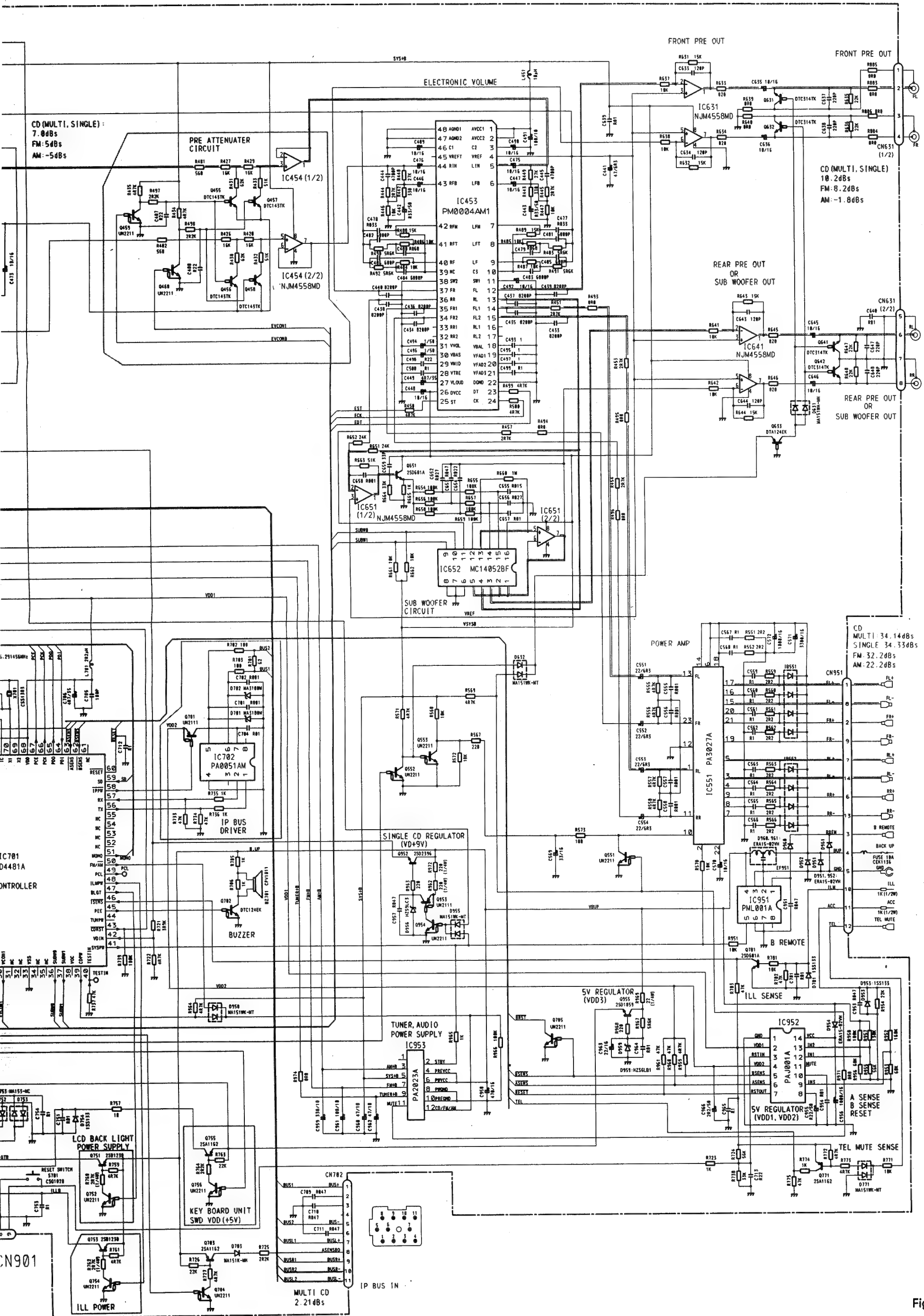
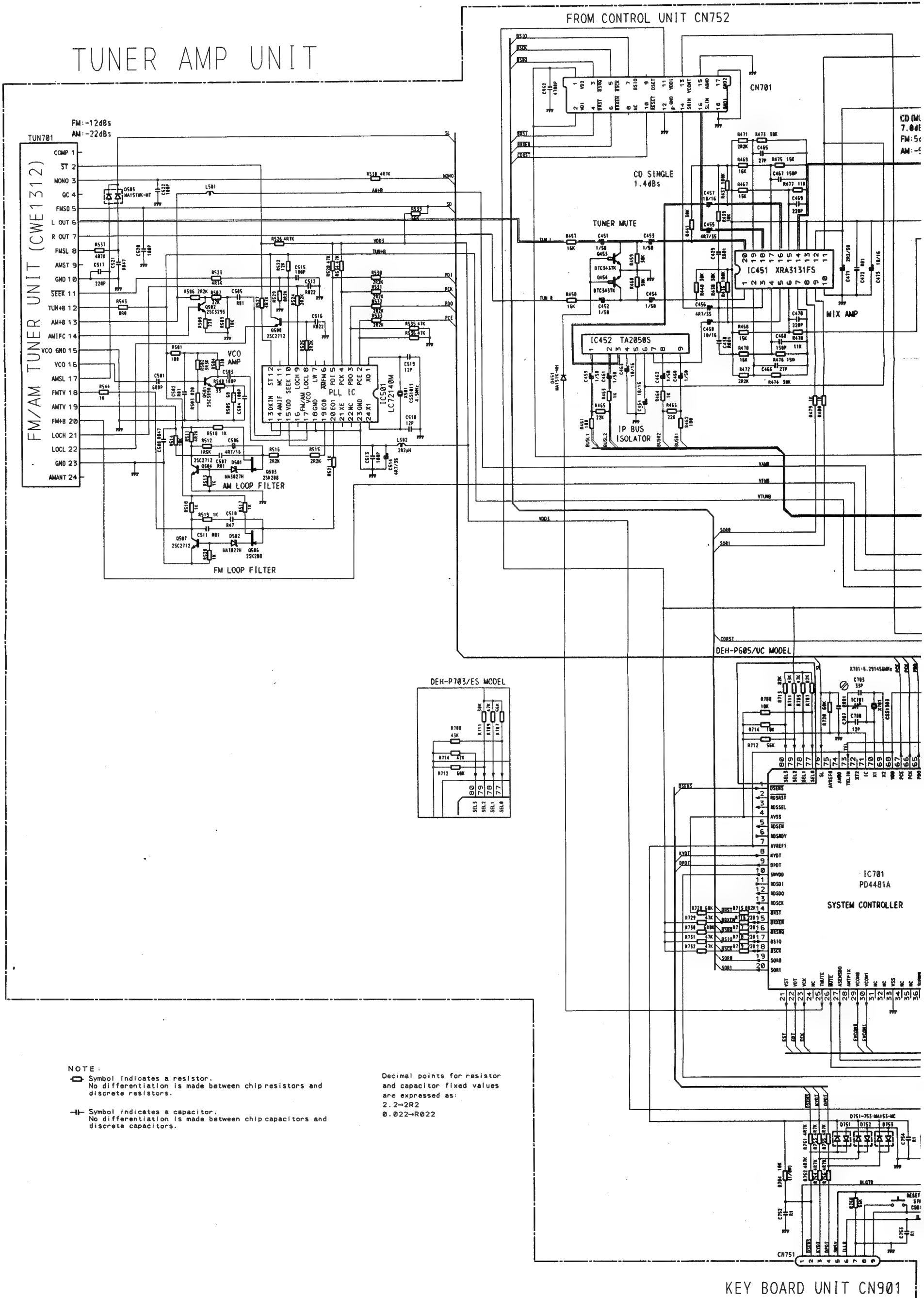


Fig.5

3.2 TUNER AMP UNIT(DEH-P703/ES,DEH-P605/UC)

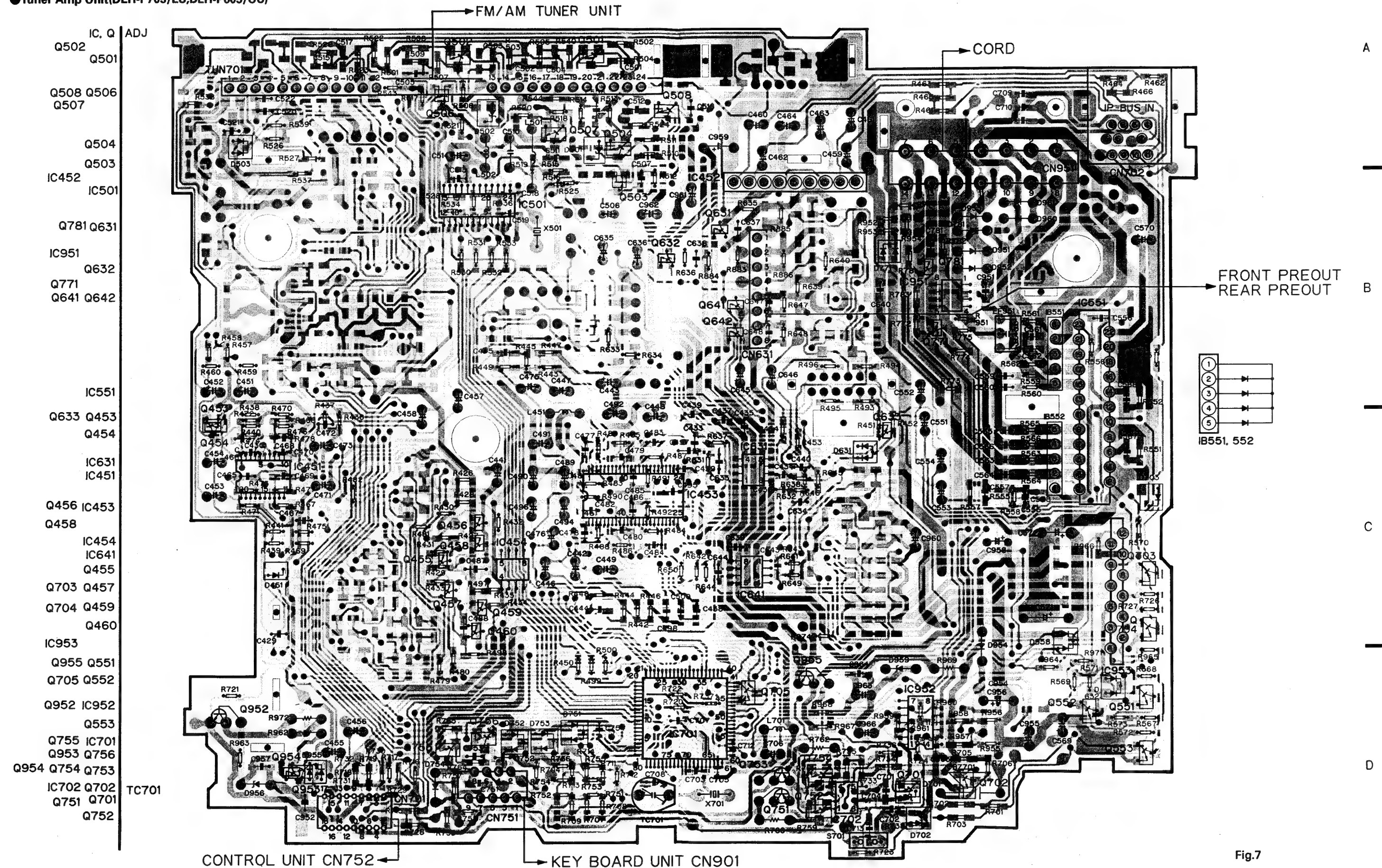
TUNER AMP UNIT







●Tuner Amp Unit(DEH-P703/ES,DEH-P605/UC)





### 3.3 TUNER AMP UNIT(DEH-P705RDS/EW)

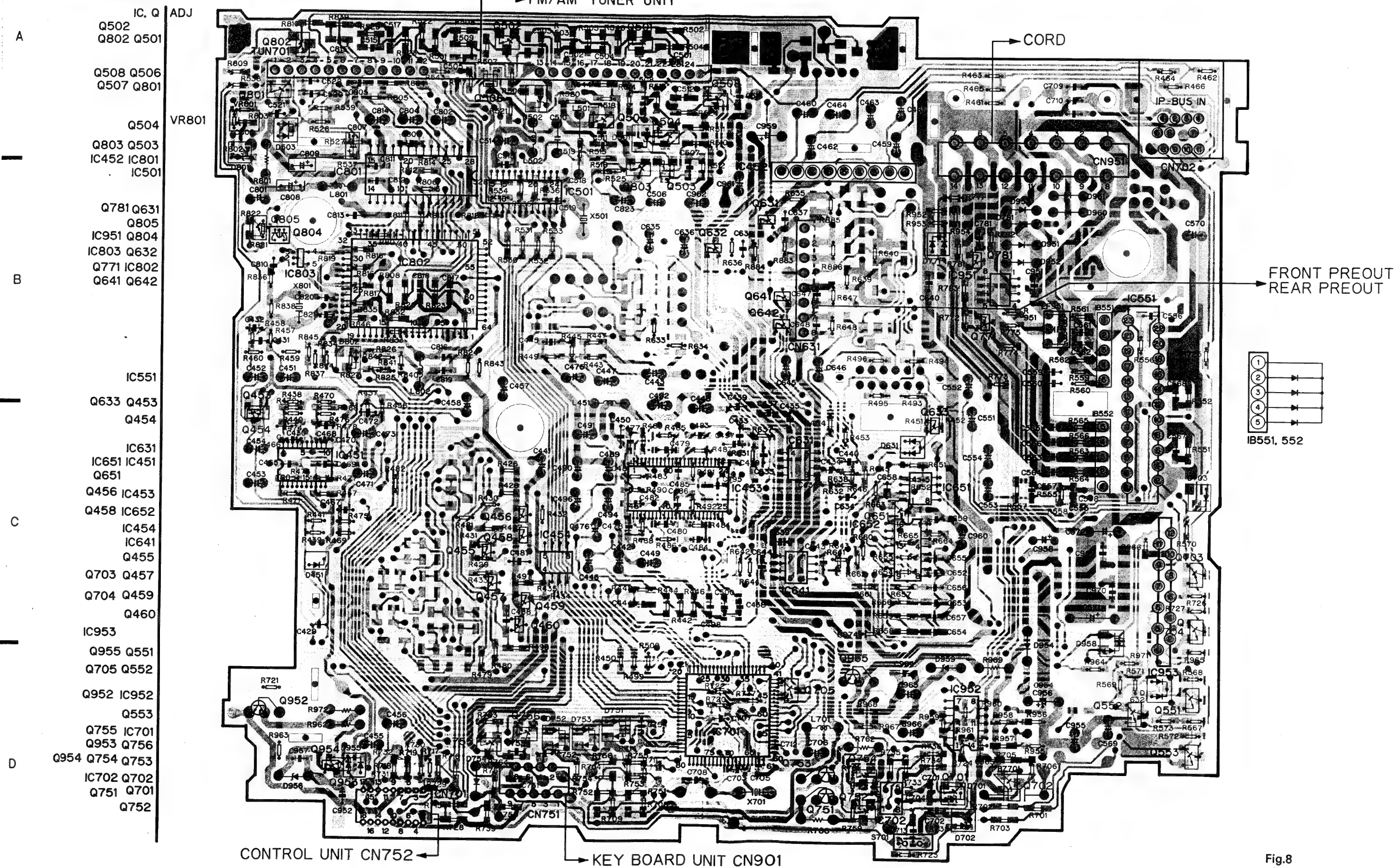
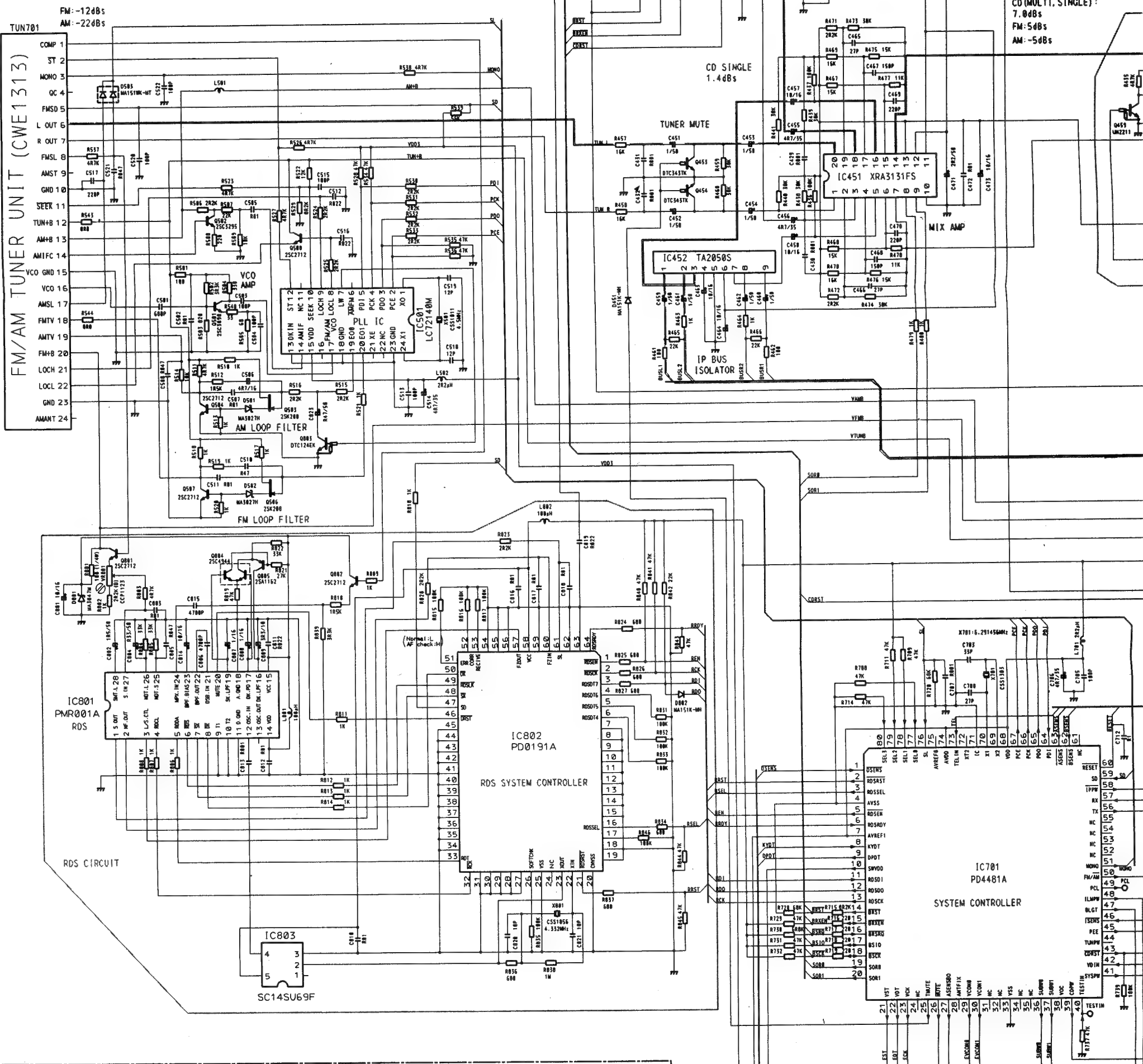


Fig.8



# TUNER AMP UNIT

FROM CONTROL UNIT CN752



NOTE:  
 □ Symbol indicates a resistor.  
 No differentiation is made between chip resistors and discrete resistors.  
 □ Symbol indicates a capacitor.  
 No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:  
 2.2→2R2  
 0.022→R022

KEY BOARD UNIT CN901

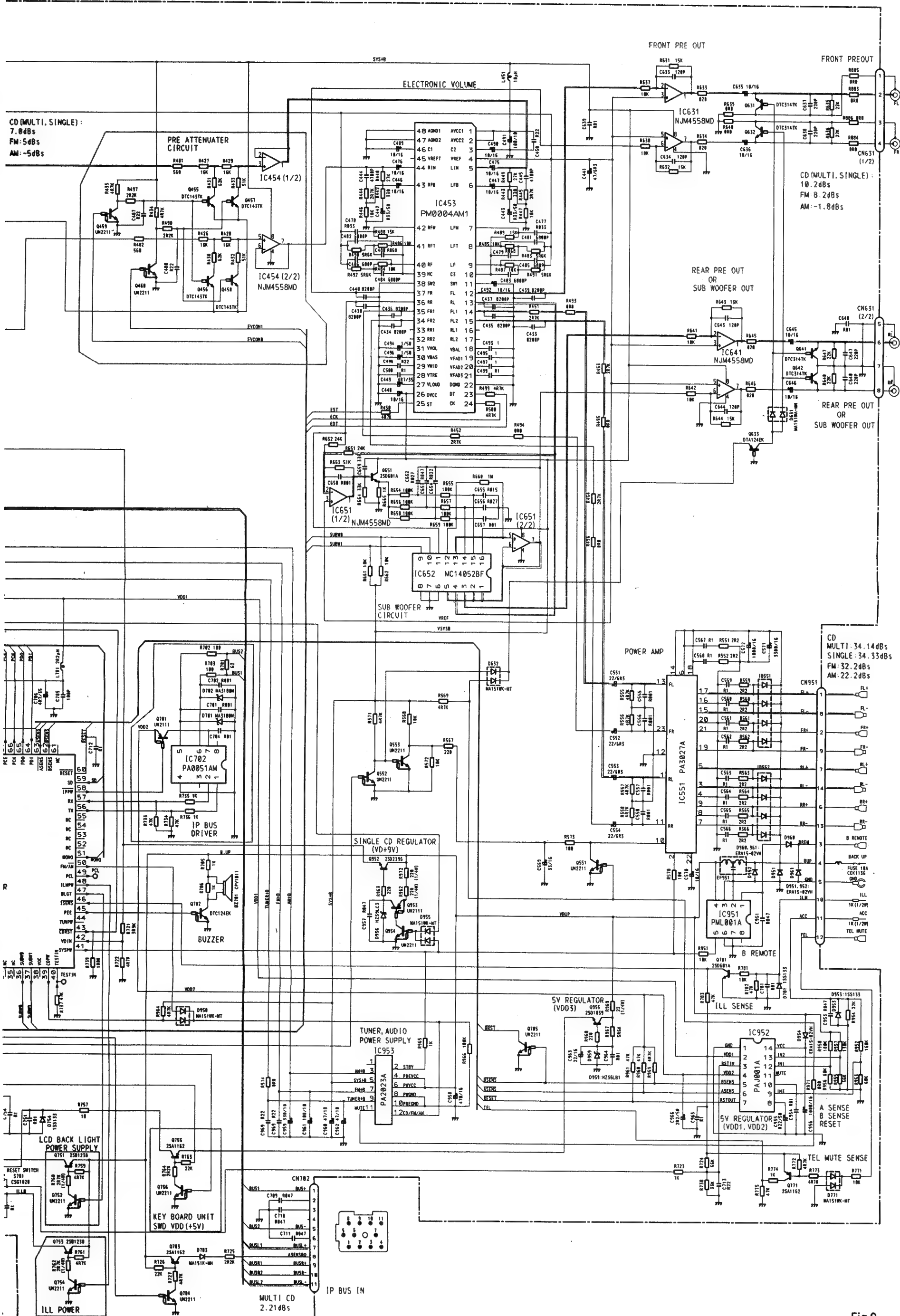



Fig.9



-  Symbol indicates a resistor.  
No differentiation is made between chip resistors and discrete resistors.
-  Symbol indicates a capacitor.  
No differentiation is made between chip capacitors and discrete capacitors.

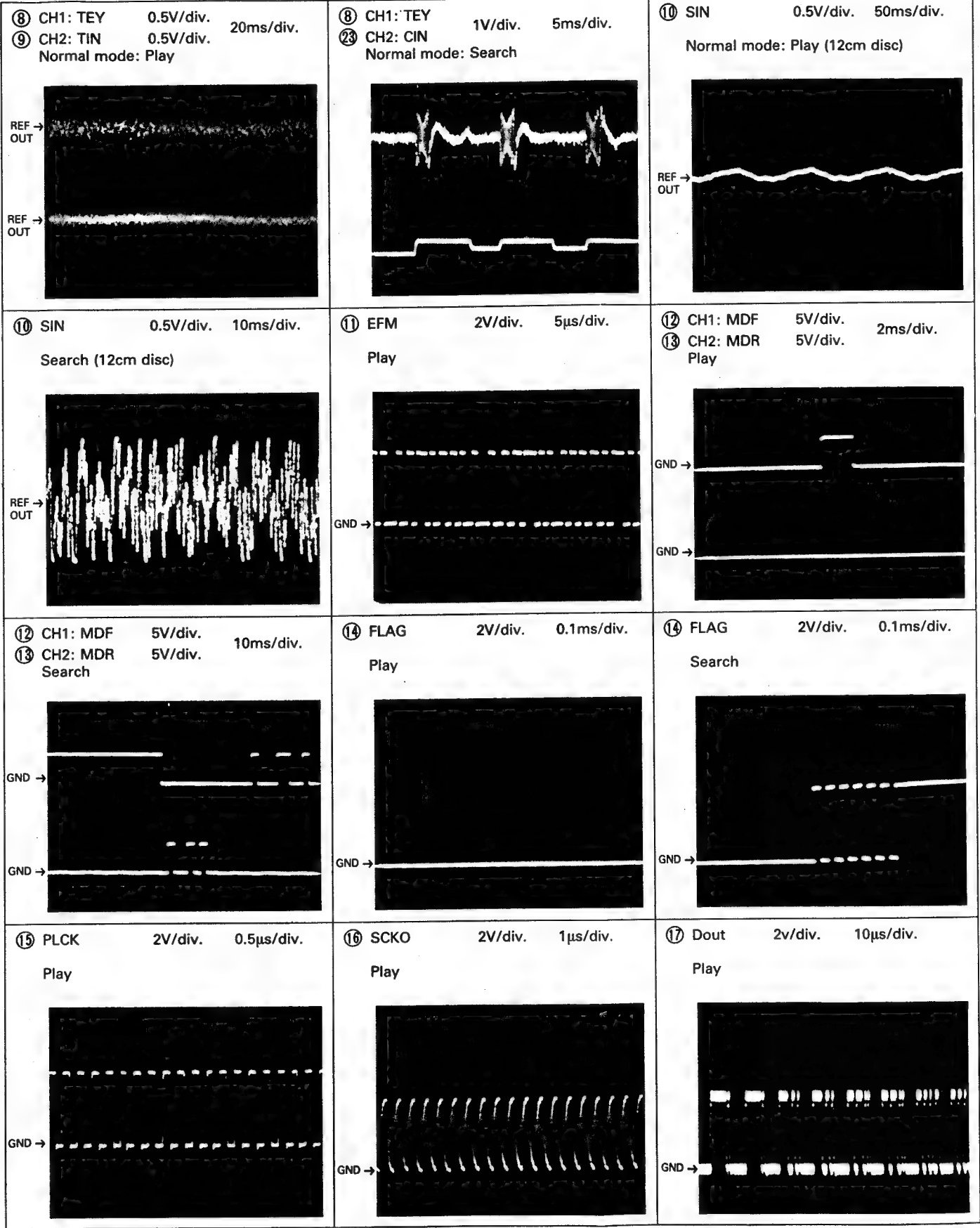
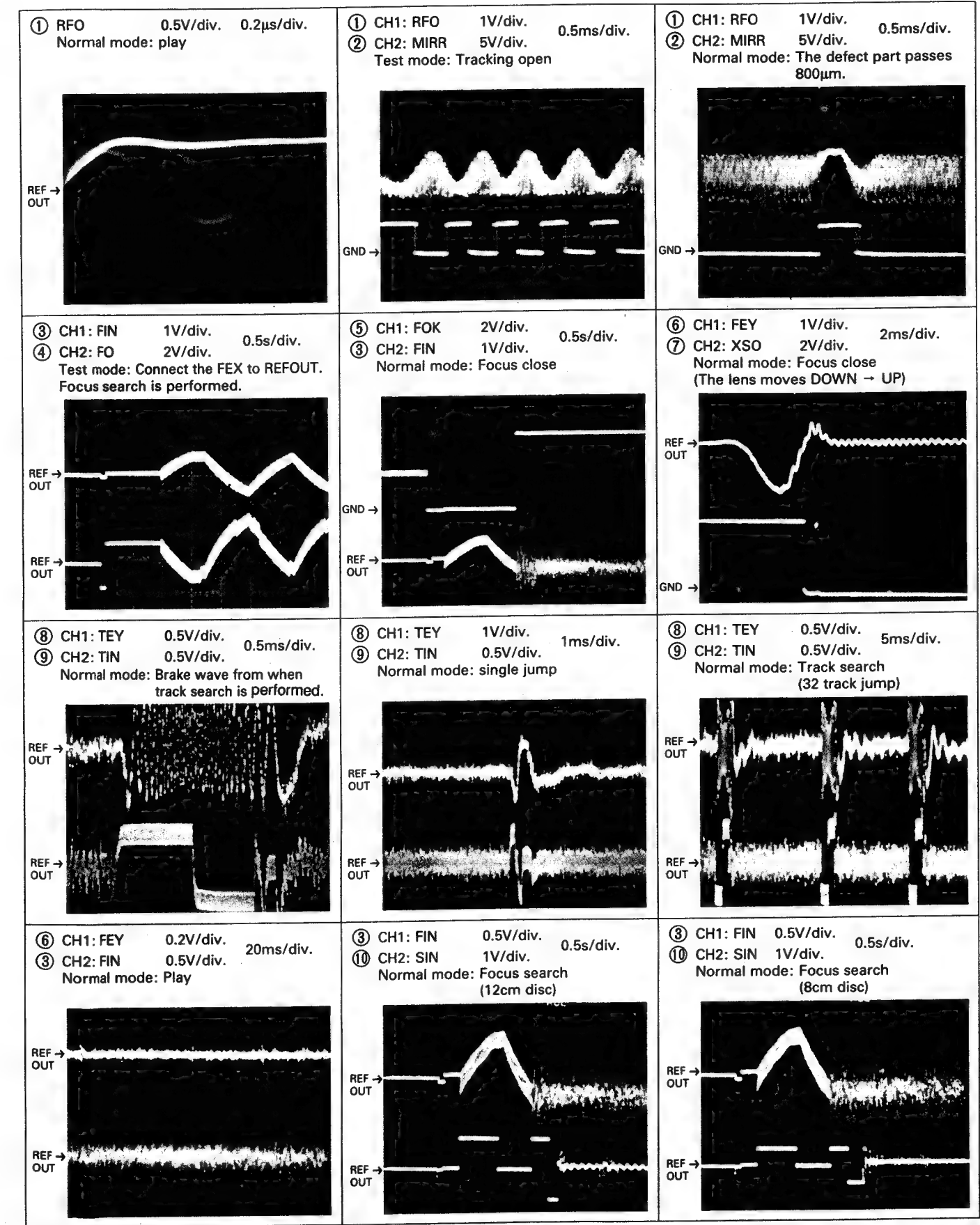
$$\begin{aligned} 2.2 &\rightarrow 2R2 \\ 0.022 &\rightarrow R022 \end{aligned}$$

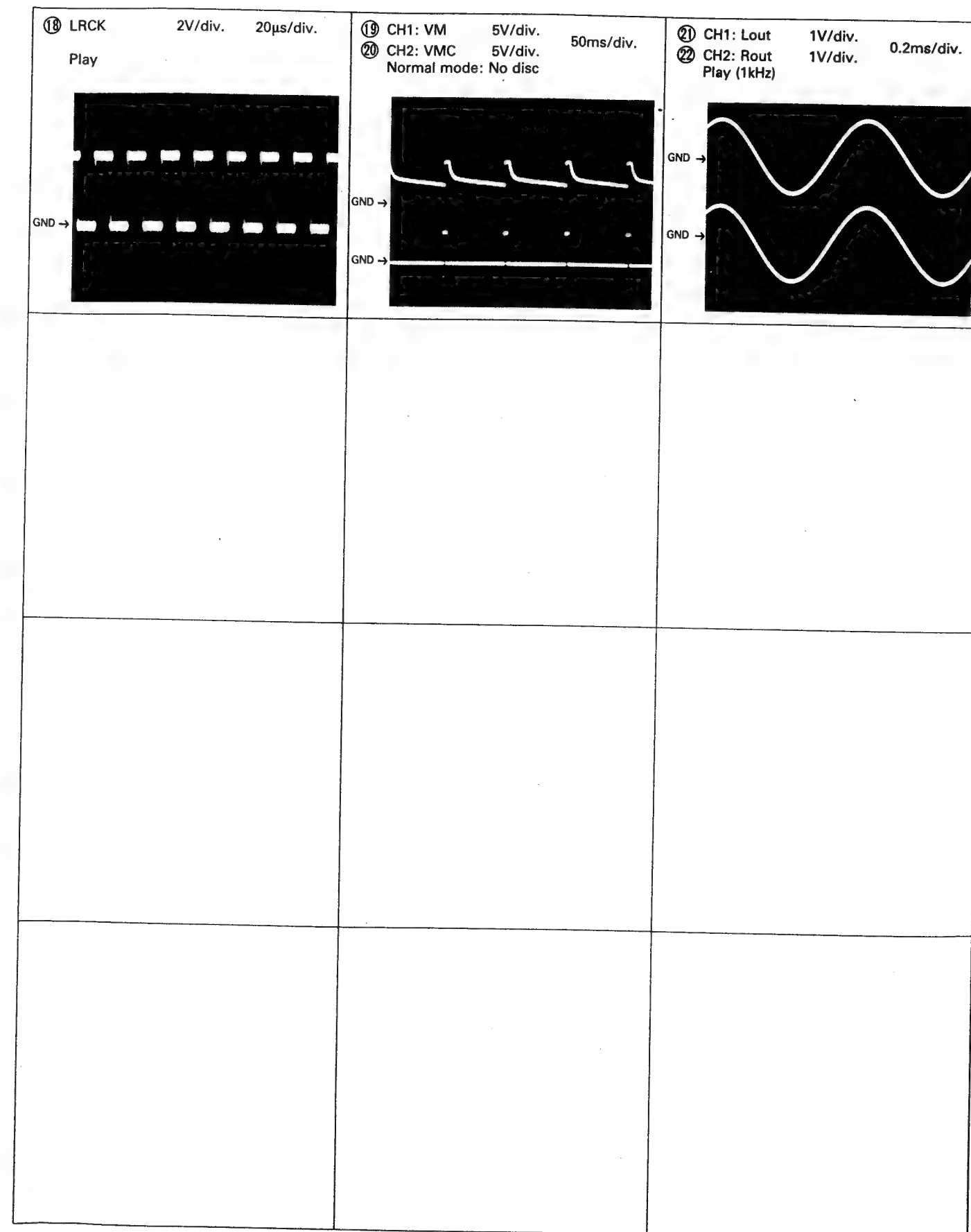
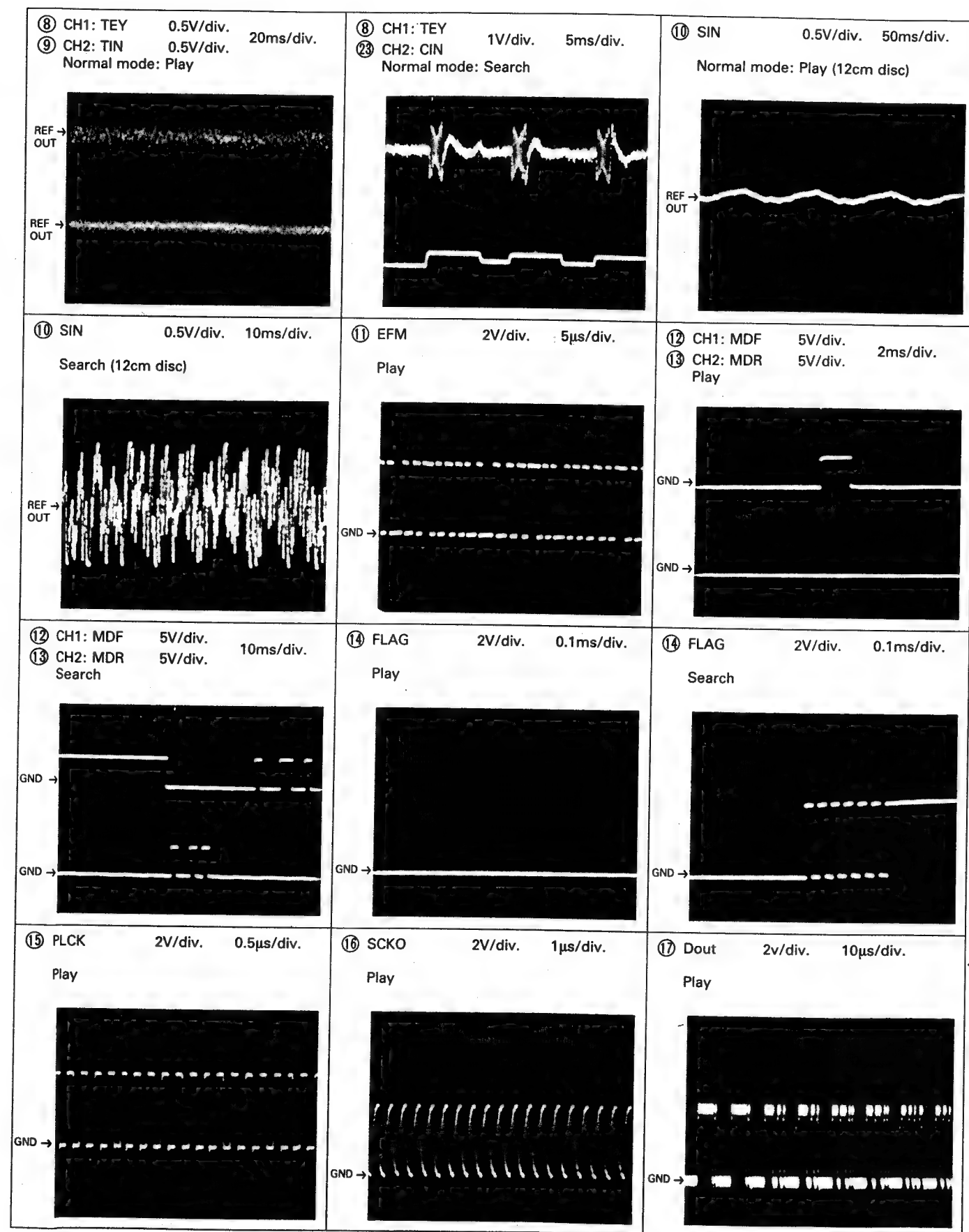

2-26



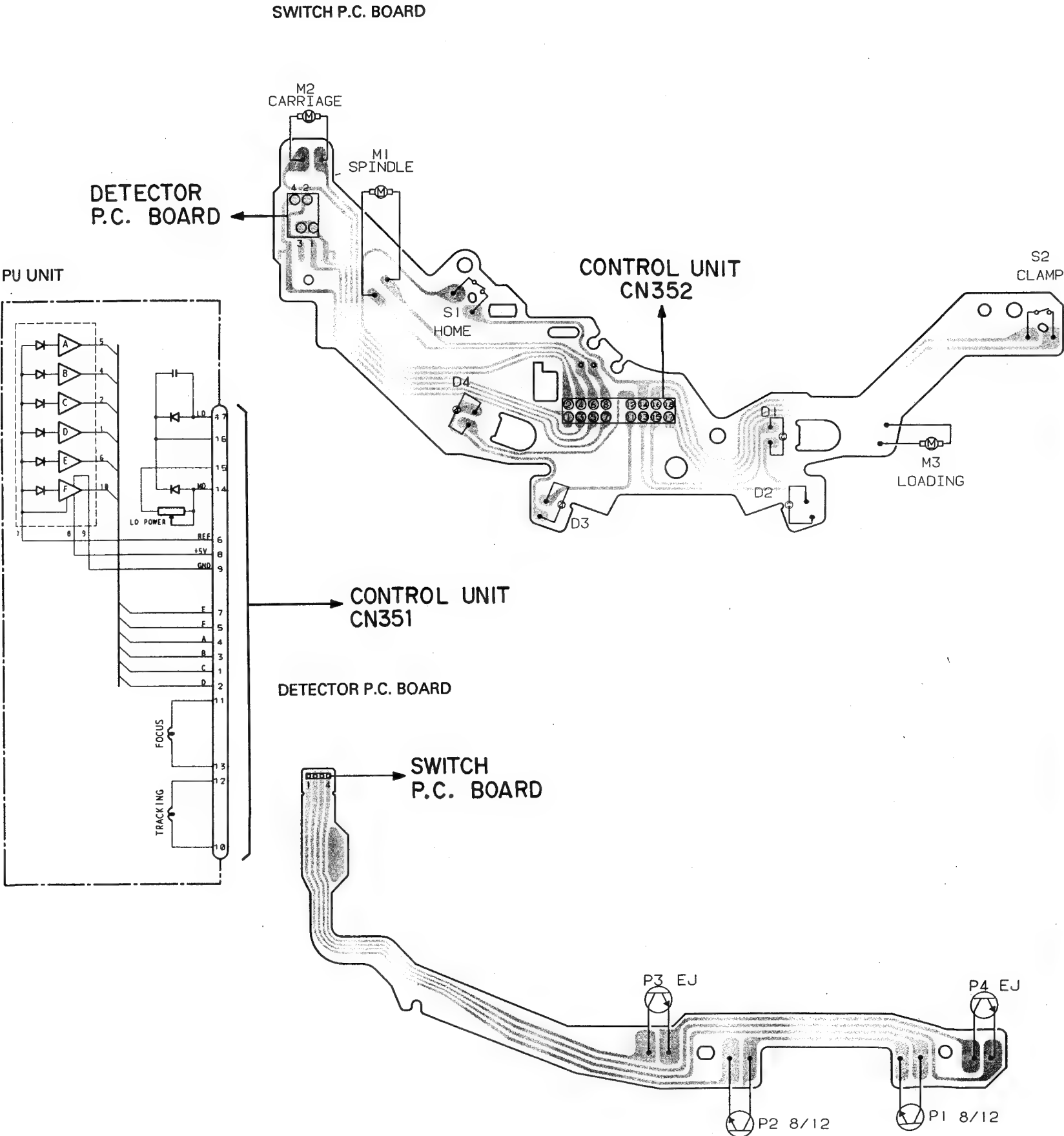
Wave Forms

Note: 1. The encircled numbers denote measuring points in the circuit diagram.  
2. Reference voltage  
REFOUT: 2.5V

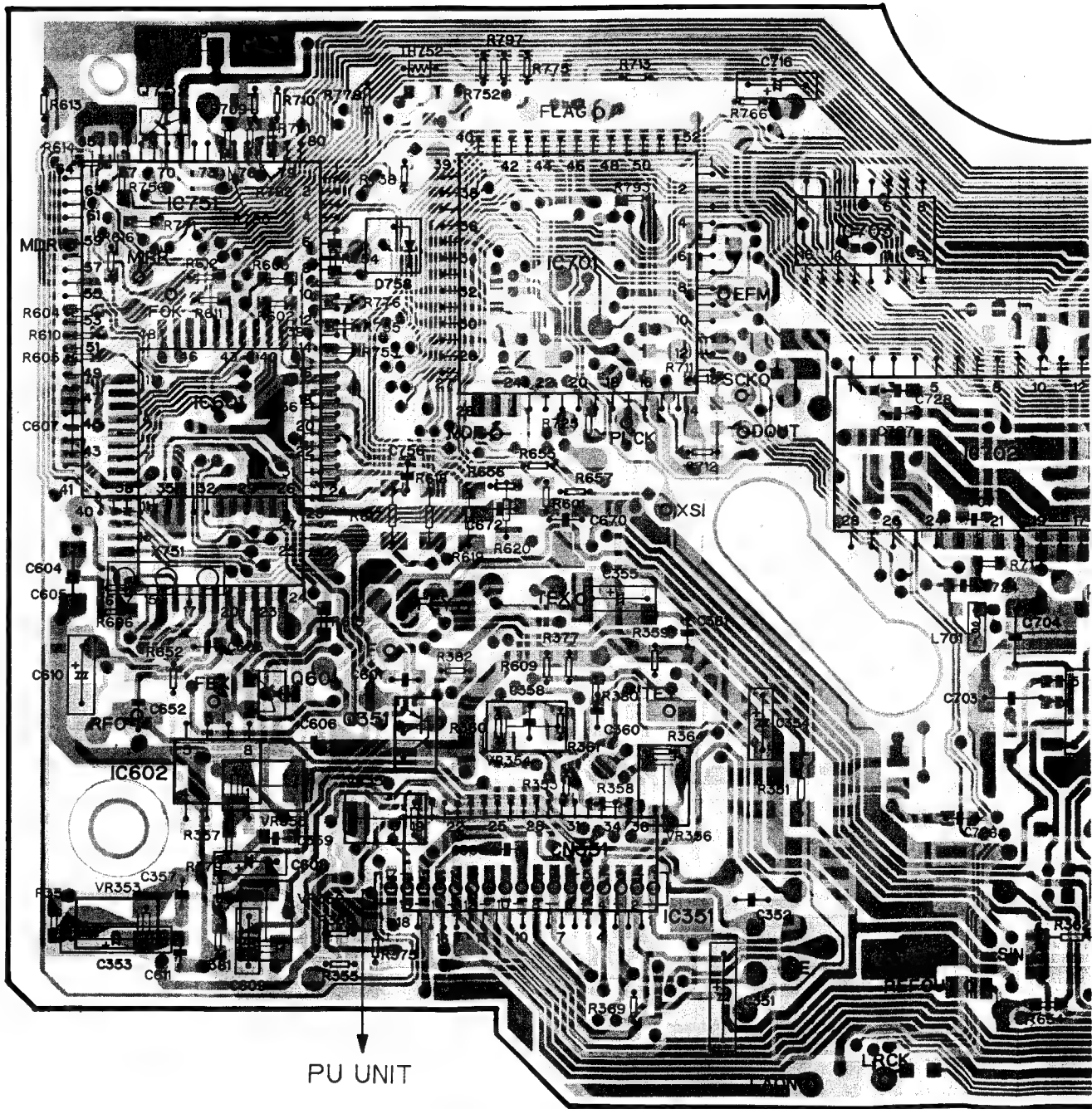




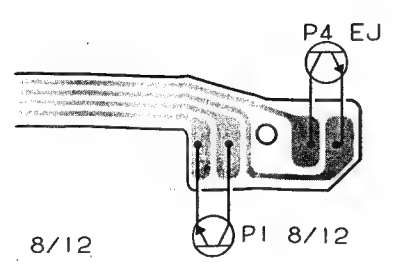
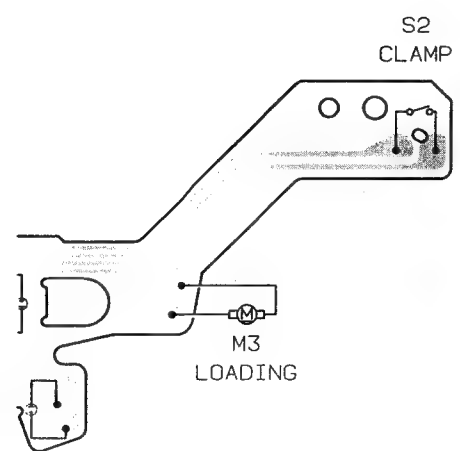
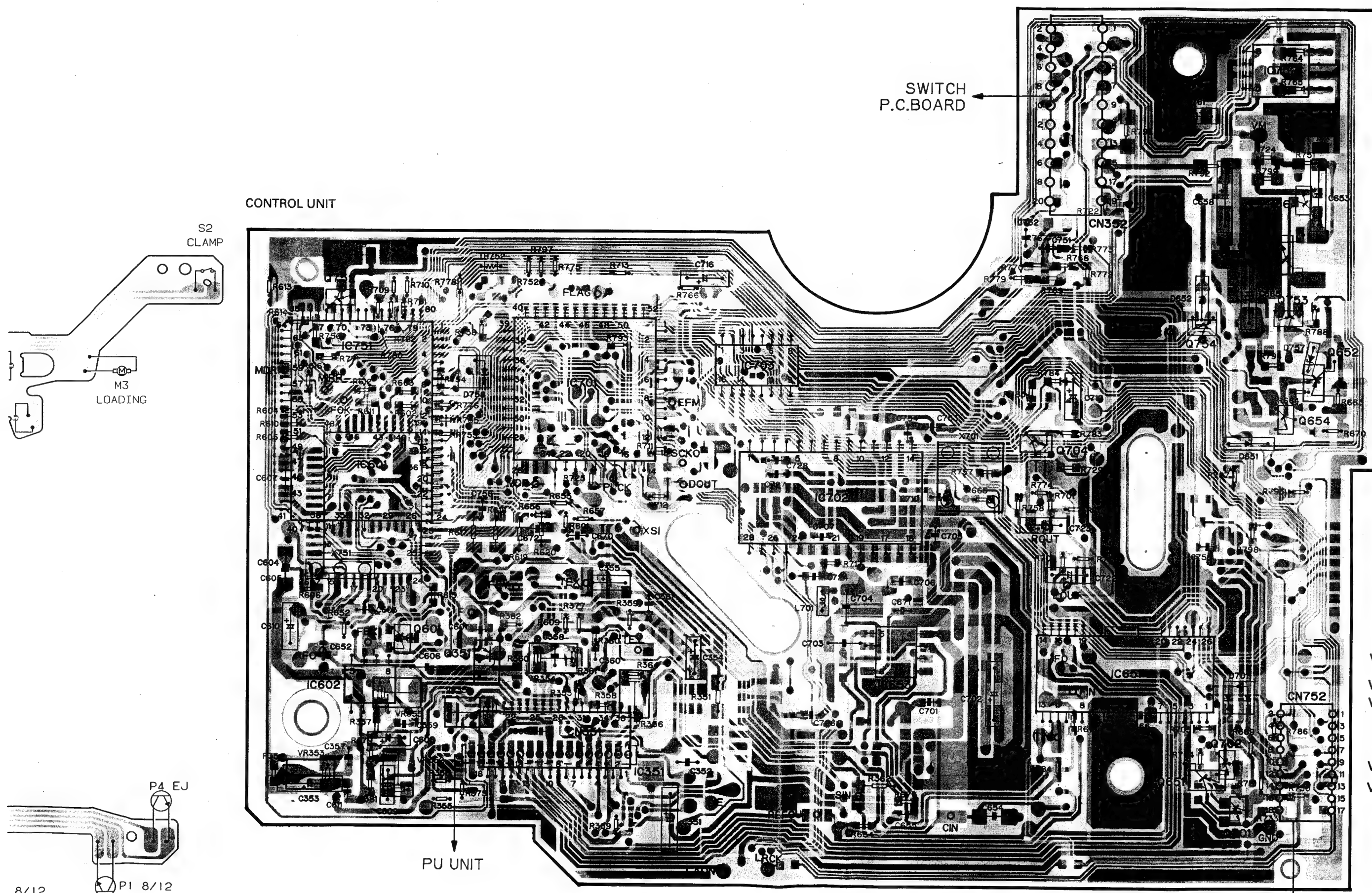
● CD Mechanism Module



CONTROL UNIT







ADJ	IC, Q	
	IC752	A
	Q756	
	Q755	
	Q752 Q753	
	Q754	B
	IC751 IC703	
	IC701 Q652	
	Q654	
	Q704	
	IC601	
	IC702	C
	Q601	
VR354	IC653 IC651	
VR355	IC602 Q351	
VR356		
VR351	IC351 Q702	
VR353	Q651	
VR352	Q701	D



### 3.6 FM/AM TUNER UNIT(UC ,ES MODEL)

**NOTE:**

- Symbol indicates a resistor.  
No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor.  
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:  
2.2→2R2  
0.022→R022

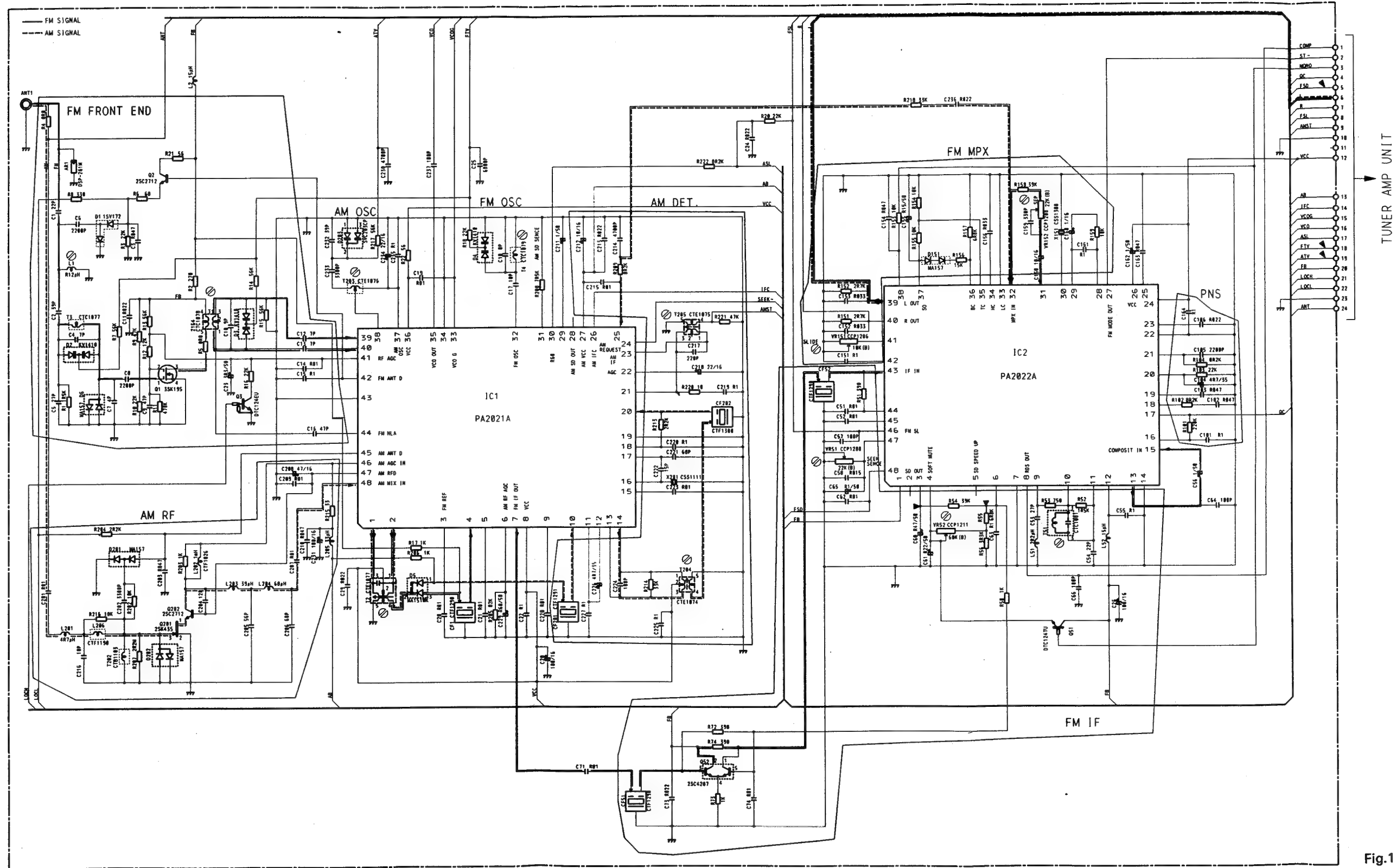


Fig.1

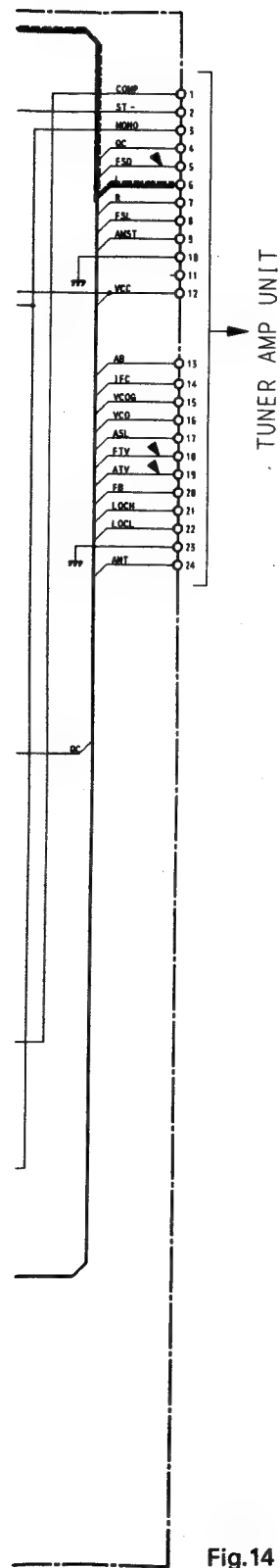


Fig.14

● FM/AM Tuner Unit(UC,ES MODEL)

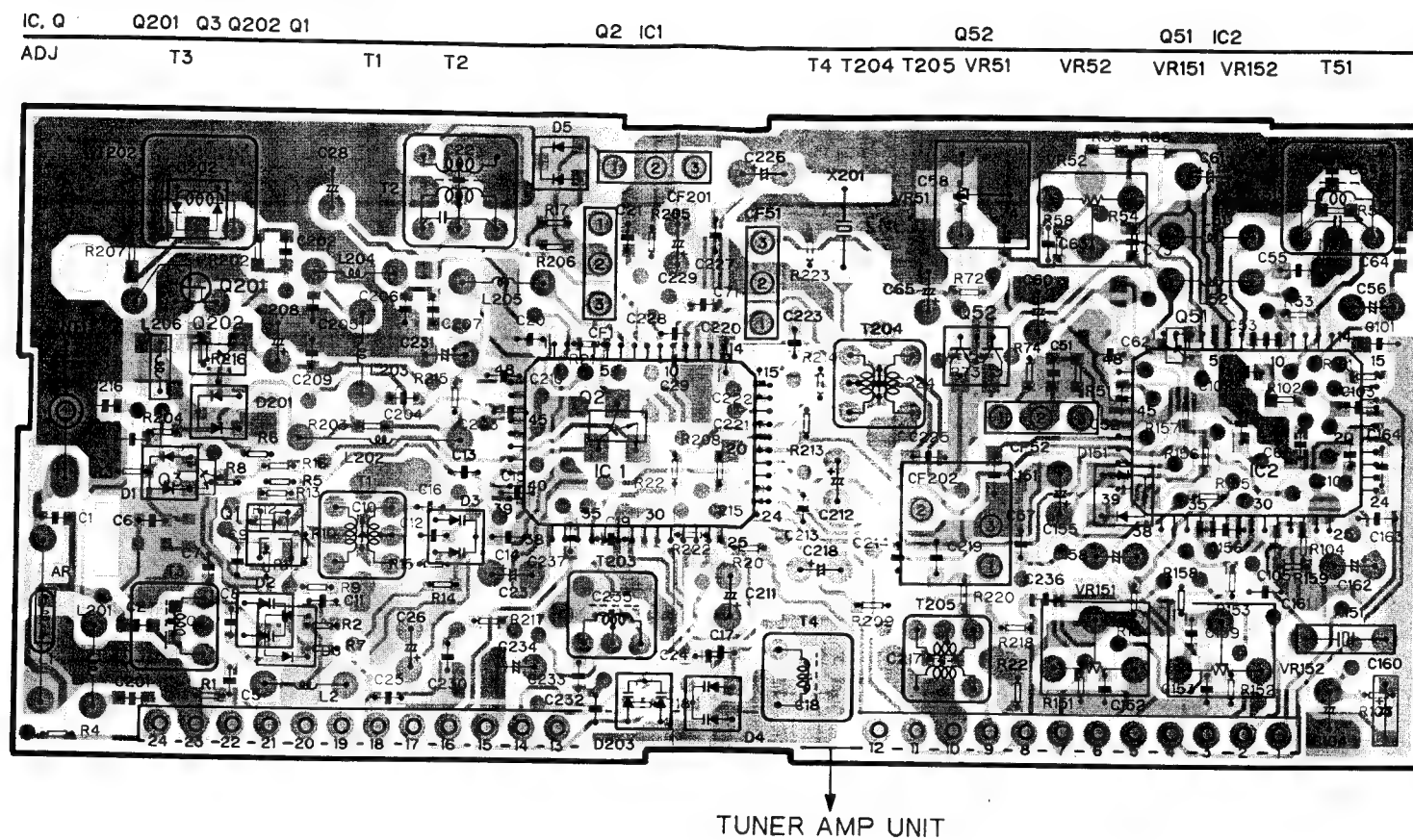


Fig.15

3.7 FM/AM TUNER UNIT(EW MODEL)

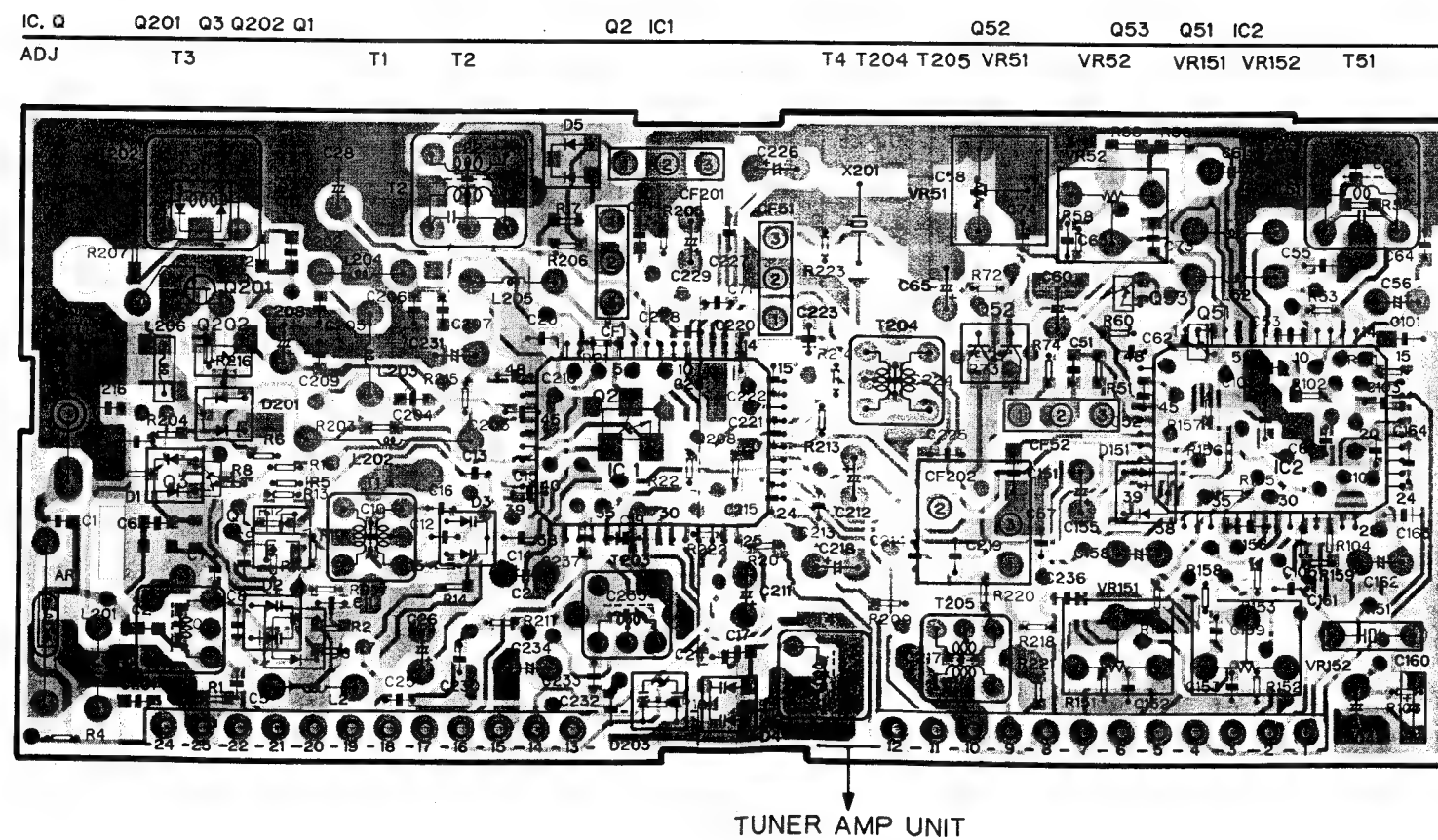


Fig.16

## TUNER AMP UNIT CN751



● **Key Board Unit**

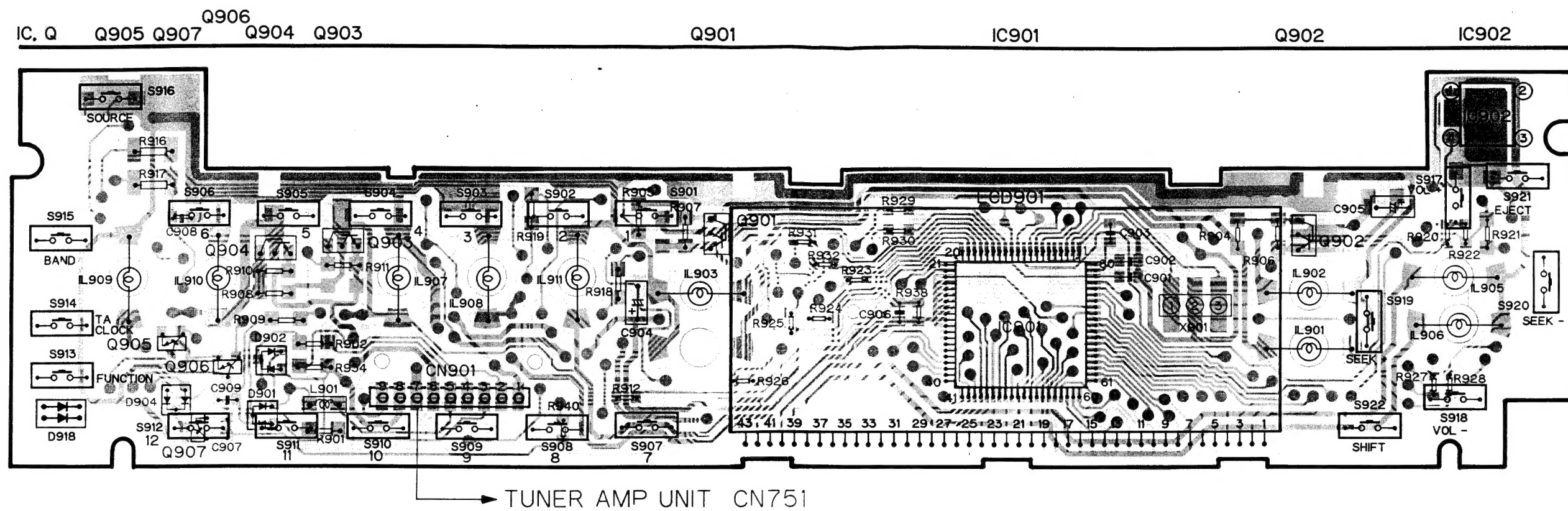


Fig.13

**Fig.12**



### 3.6 FM/AM TUNER UNIT(UC ,ES MODEL)

**NOTE:**

- Symbol indicates a resistor.  
No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor.  
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:  
2.2→2R2  
0.022→R022

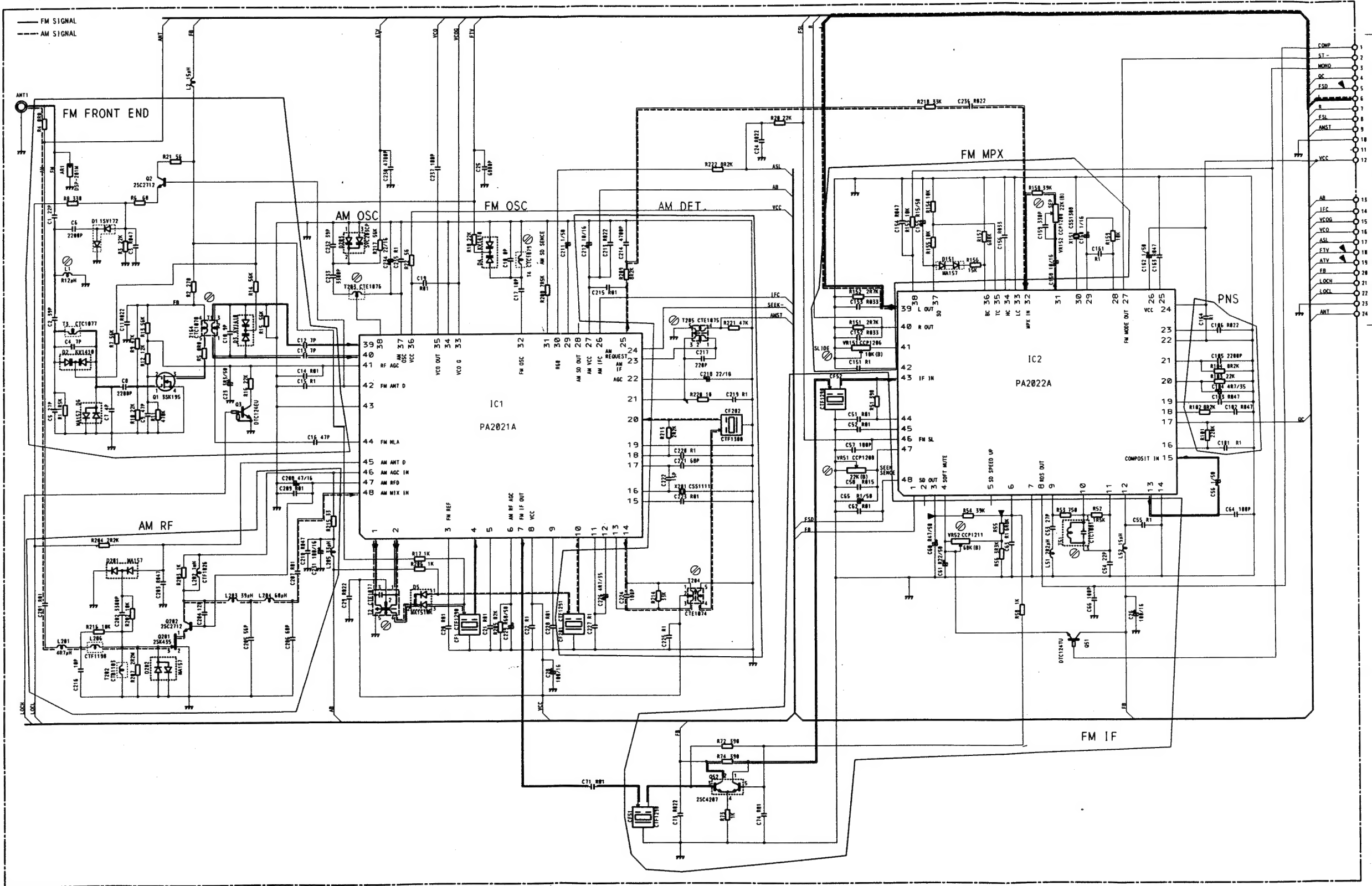


Fig.14

● FM/AM Tuner Unit(UC,ES MODEL)

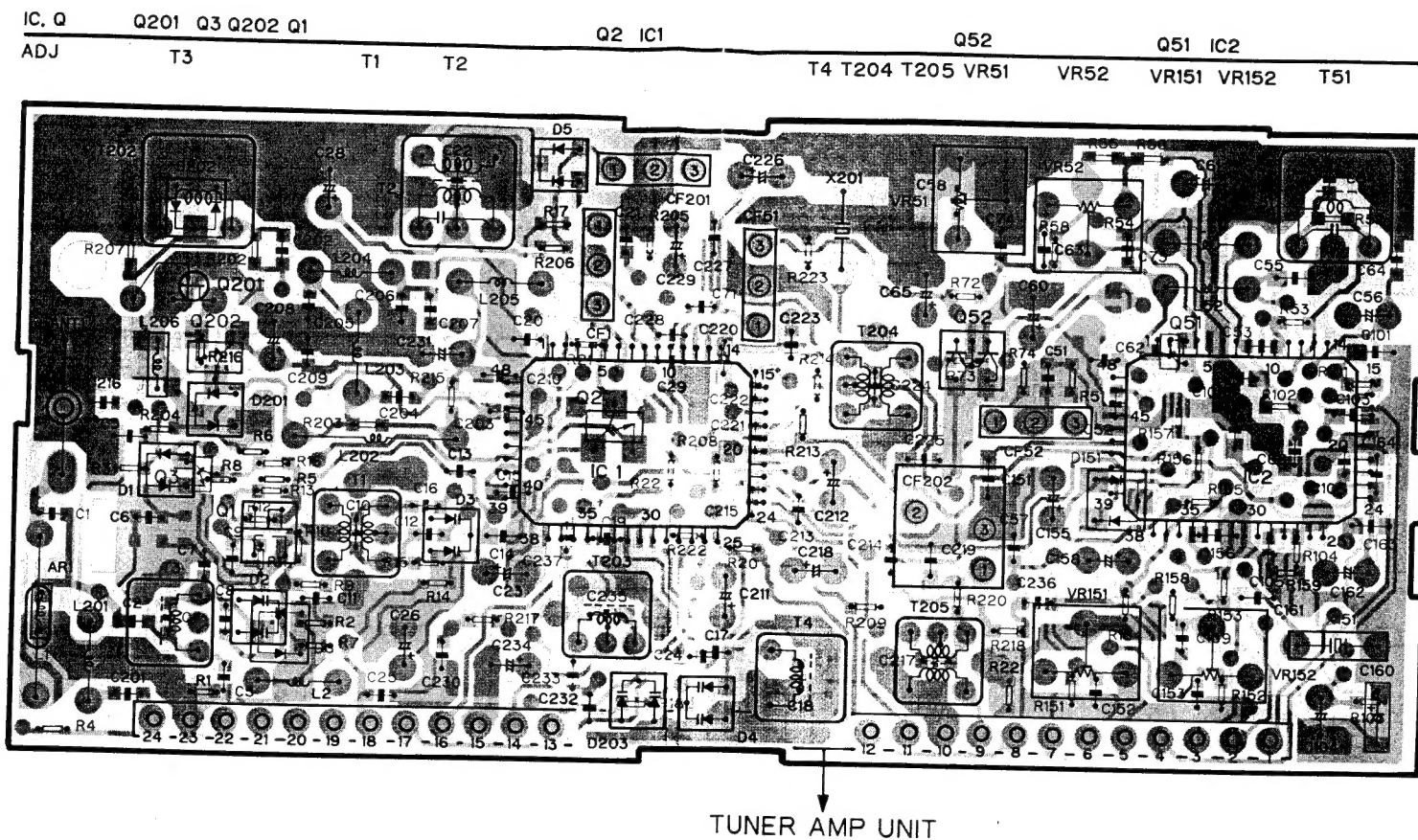


Fig.15

3.7 FM/AM TUNER UNIT(EW MODEL)

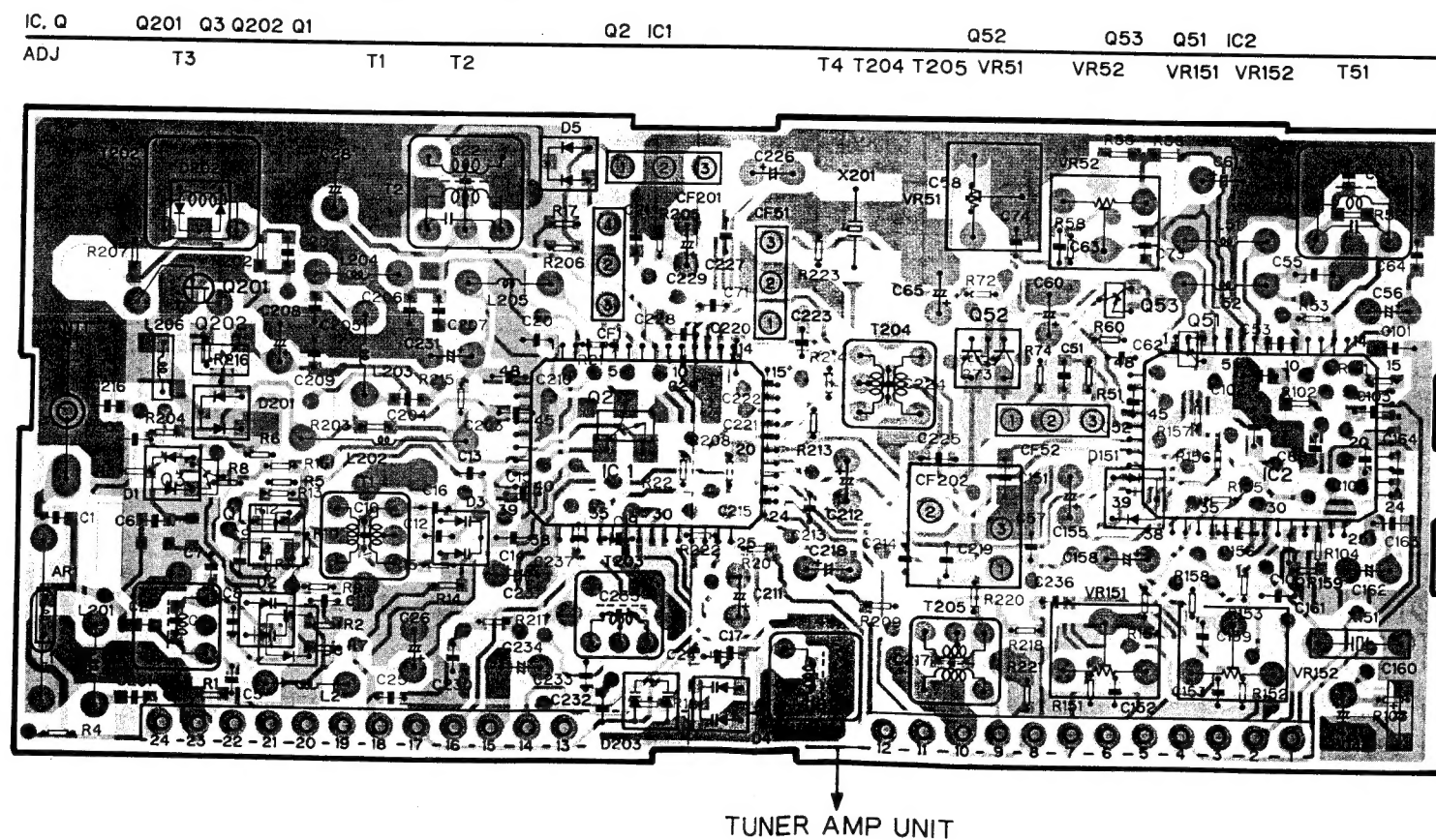


Fig.16

Fig.14

## ● FM/AM Tuner Unit(EW Model)

## NOTE:

□ Symbol indicates a resistor.  
No differentiation is made between chip resistors and discrete resistors.

—||— Symbol indicates a capacitor.  
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:  
2.2-2R2  
0.022-R022

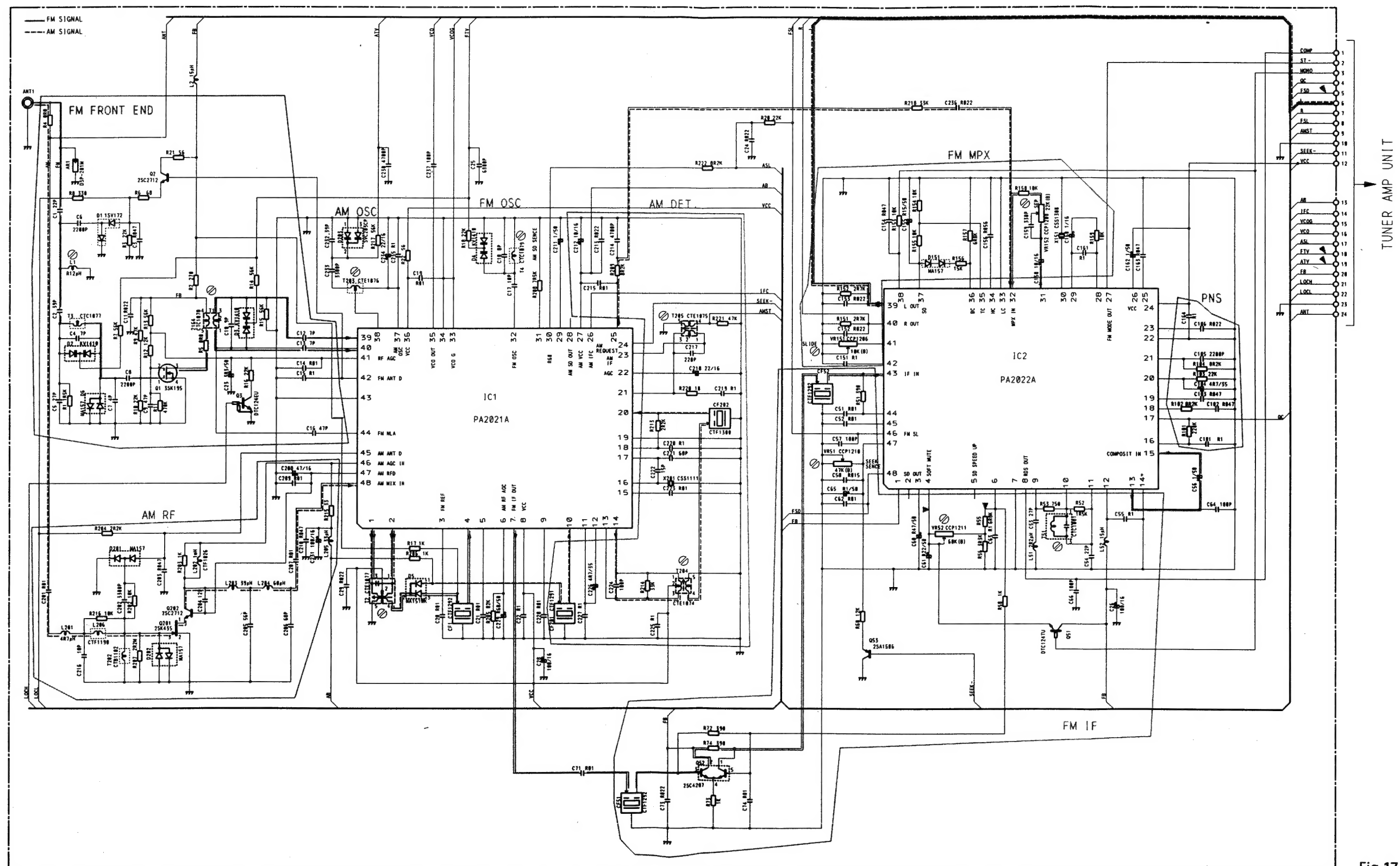


Fig.17